
MAPPING AI IN THE MENA REGION

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Introduction

The MENA AI landscape appears to be vibrant, with many entities catalyzing smart technologies for digital transformation.¹ Moreover, AI is predicted to have a considerable impact on the region's economy, across all sectors and labour market, fueling \$320 billion in the next decade.²

At present however, a scarce amount of sources exist on what constitutes the AI MENA landscape. There have been efforts to bring together the pan-Arab AI community in conferences such as the Arab AI Summit hosted in Jordan in 2019³, the Arab IOT and AI Challenge hosted in Egypt.⁴ But details about key players and entities, policies and research that revolve around AI are sparsely documented. In order to fully exploit the potential of existing capacities and understand gaps in practices, it is essential to map this ecosystem.

While this is not meant to be an exhaustive map, we do aim to capture essential data to encourage future work. We hope this snapshot will be a first step from which we can foster a stronger understanding of how AI is being leveraged in the region.

¹ World Economic Forum on the Middle East and North Africa Building New Platforms of Cooperation [http://www3.weforum.org/docs/MENA19_Report_light.pdf]

² The potential impact of Artificial Intelligence in the Middle East [<https://www.pwc.com/m1/en/publications/potential-impact-artificial-intelligence-middle-east.html>]

³ Arab Artificial Intelligence Summit – Phi Science Institute [<https://aais.phiscience.co/>]

⁴ 2020 Arab IoT & AI Challenge [<https://arabiotai.org/>]

Relevant work

There have been numerous attempts to gain a better understanding of the AI ecosystem in the MENA region. Multinational consulting firm PriceWaterhouseCoopers (PwC) studied and forecasted the economic impact of AI in the Middle East.⁵ Birzeit University in the Occupied Palestinian Territories sought to explore a field broader than AI, mapping entities participating in the data economy as a whole in the MENA.⁶ Additionally Microsoft and Ernst & Young studied AI maturity in the Middle East and Africa region.⁷

Moreover, the International Development Research Centre (IDRC) has taken particular interest in this sort of AI mapping activity, researching the global south landscape,⁸ the sub-saharan continent,⁹ and partnering with Oxford Insights to develop a Government AI Readiness Index which indicates each country's potential to catalyse the economic opportunity brought by AI.¹⁰

The lenses of these works vary in the ecosystems they study (economic, policy, etc.), and landscape explored (Middle East, Global South, etc.); however no research report documents multiple ecosystems across the MENA region.

⁵ The potential impact of Artificial Intelligence in the Middle East

[<https://www.pwc.com/m1/en/publications/potential-impact-artificial-intelligence-middle-east.html>]

⁶ CCE workshop discusses opportunities to develop data economy in MENA

[<https://www.birzeit.edu/en/news/cce-workshop-discusses-opportunities-develop-data-economy-mena>]

⁷ Artificial Intelligence in Middle East and Africa

[<https://news.microsoft.com/en-xm/2019/06/10/microsoft-ey-joint-study-unveils-ai-maturity-levels-amongst-uae-businesses-including-next-steps-to-accelerate-digital-transformation/>]

⁸ Global South map of emerging areas in Artificial Intelligence

[<https://www.k4all.org/project/aiecosystem/>]

⁹ Mapping policy and capacity for artificial intelligence for development in Africa

[<https://www.idrc.ca/en/project/mapping-policy-and-capacity-artificial-intelligence-development-africa>]

¹⁰ Government Artificial Intelligence Readiness Index 2019

[<https://www.oxfordinsights.com/ai-readiness2019>]

Scope

Landscape

In this report, we cover the Arabic-speaking countries in the MENA region. According to the United Nations Office of the High Commissioner of Human Rights (UNOHCHR), the MENA region consists of 19 countries of which 17 are Arabic-speaking. We study the below 17 countries:

Algeria	Iraq	Lebanon	Oman	Saudi Arabia	UAE
Bahrain	Jordan	Libya	Palestine	Syria	Yemen
Egypt	Kuwait	Morocco	Qatar	Tunisia	

Terminology

There are many definitions to AI and this report defines the term as the use of digital technology to establish systems capable of completing tasks that simulate human mental capabilities, its patterns of behaviour, and undertake an analysis of the surrounding environment to make predictions, recommendations, or decisions, or even take action that affects real or fictitious environments with a degree of autonomy.¹¹

Ecosystems

In this mapping exercise, we studied smaller ecosystems that make up national ecosystems, these include:

1. Industrial ecosystems: entities who develop or specialize in AI, for profit
2. Governmental ecosystems: entities who engage in AI policies
3. Civil Society ecosystems: entities who question AI and AI policies
4. Education and research ecosystems: entities who engage in AI research or capacity building
5. Funding ecosystems: entities who fund AI initiatives, directly or indirectly

¹¹ السياسة الأردنية للذكاء الاصطناعي لسنة ٢٠٢٠

[https://modee.gov.jo/ebv4.0/root_storage/en/eb_list_page/ai_final_-_english_version.pdf]

Methodology

Our methodology consists of two parts: 1) desk-based research, or secondary research, using online sources, and 2) primary research through contacting and surveying local experts via emails and virtual calls.

Desk-based research

In order to cover the inclusion criteria, we searched through data sources:

1. Global online databases such as Crunchbase and Startup Grind,
2. Regional online databases such as Wamda, Mattermark, and TTI,
3. Media articles and press releases mentioning AI in the MENA region,
4. Social networks searching for entities that fit the criteria (LinkedIn and Facebook).
5. Specific entities' websites (governmental and academic bodies),
6. Existing mappings as the ones mentioned under "Relevant Work".

DATA GATHERING

We proceeded to list entities and categorise them according to sub-ecosystem. To aid our research and selection process, we pinpointed data sources for each sub-ecosystem and defined a strict inclusion criteria.

SUB-ECOSYSTEM	EXAMPLES	DATA SOURCES
Industrial	For-profit entities developing AI or leveraging AI in their core product: companies, corporations, and startups.	Regional and global online databases, media articles and press releases, social networks.
Governmental	AI-centric government initiatives: AI regulation policies, national AI strategies, new ICT-related ministries.	Respective government and ministry websites, press articles.

Civil Society	Organisations that engage with AI and run AI training programs regularly: civil society organisations, think tanks, independent research institutes, and media outlets.	Media articles and press releases, social networks.
Educational/ Research	Academic bodies that invest in AI research and teaching: universities, research departments, postgraduate degrees.	Media articles and press releases, social networks, respective academic body websites.
Funding	Entities who have a track record of funding AI projects and research: venture capital firms, investors, granting bodies, funding agencies, accelerators, incubators.	Regional and global online databases, media articles and press releases, social networks.

INCLUSION CRITERIA

Generally, mapped entities fulfil the following selection criteria:

- **Active** - sufficient evidence that operations are ongoing (through media outlets, or social media activity)
- **Explicit relevance to AI** - AI is core to the entity or initiative, AI is being leveraged in their core operations
- **Covers target country** – sufficient evidence that the entity started and still runs in the target country, even if main operations or official registration moved elsewhere later

A more specific criteria per ecosystem can be found in the appendix.

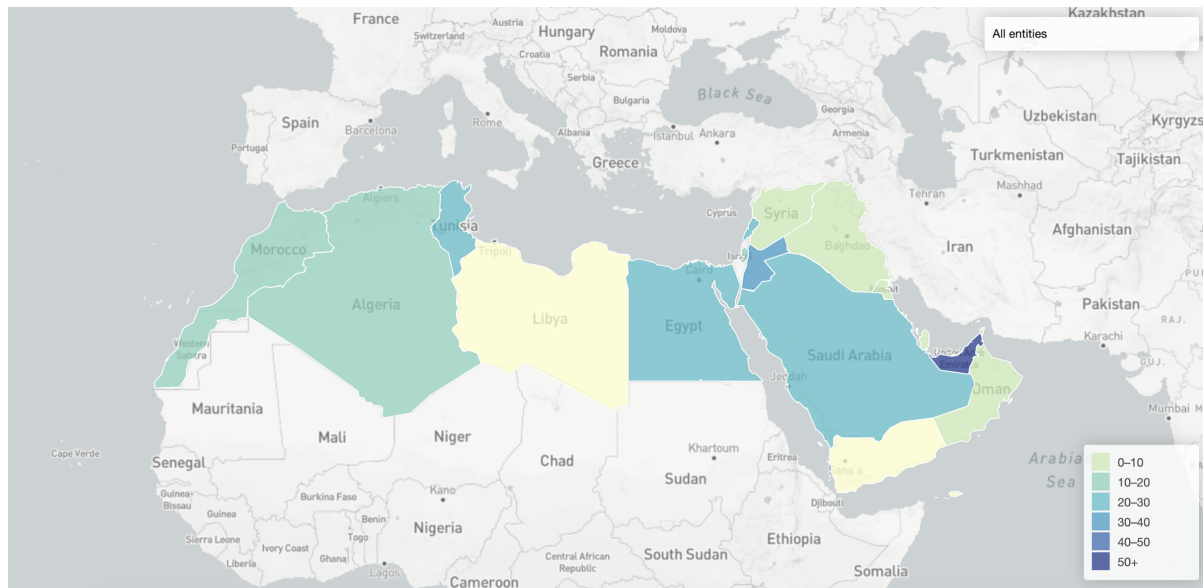
Surveying local experts

To support our desk-based research, we consulted with local experts to capture the vast array of AI activities and entities engaging with AI locally.

Limitations

It is important to note that this mapping exercise does not claim to be comprehensive in any of the countries or target ecosystems. The findings reflect the data sources available at the time of research. Desk-based research is prone to bias: there was no consistency in the keywords used to search for entities across countries, the search results will depend as well on the search engine provider. Contacting local experts also invited a two-fold bias: we contacted partners within our network, and not all partners responded to requests for participation. Particularly during the COVID-19 crisis, responses from local experts slowed down and we relied much more on secondary research. This resulted in some countries and sub-ecosystems being better represented than others. Nevertheless, we believe this mapping offers a holistic lense into the state of AI in the region, and serves as solid grounding for future research.

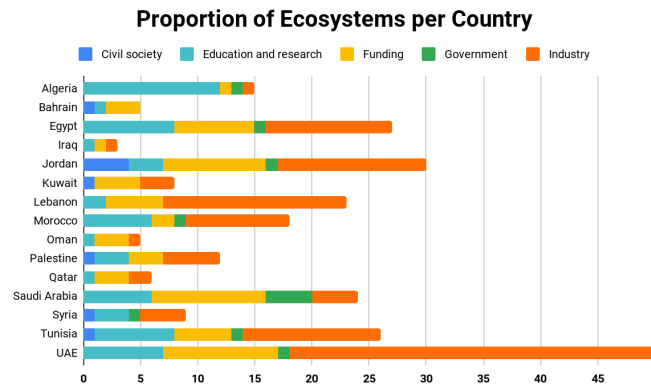
Results and observations



All AI Entities in MENA

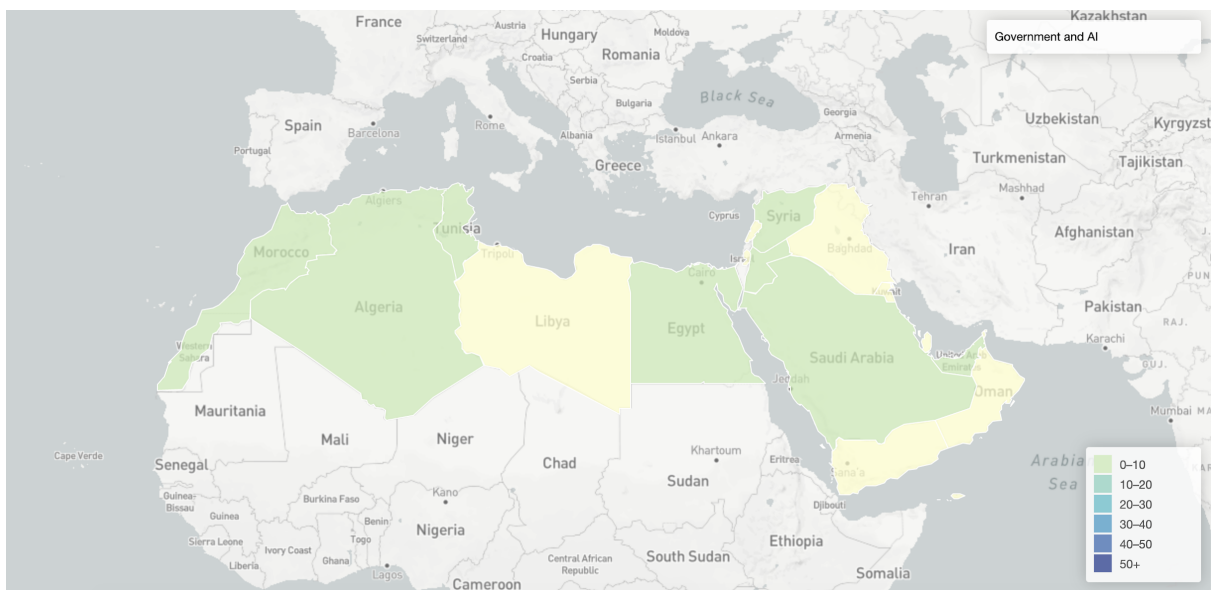
A glaring observation is the large disparity in AI-related activities between countries. Among the 17 countries studied in this report, four are in a state of ongoing war and the mention of AI in search engines yields results of unmanned combat aerial vehicles (particularly for Syria, Iraq, Libya, and Yemen). Other countries in the region have thriving AI sectors where most of the smaller ecosystems that make up the national ecosystem are activated (prominent examples include the UAE, Egypt, Jordan, KSA, Lebanon, Tunisia, Morocco).

This report does not claim to have done a complete mapping of the AI ecosystem in the MENA landscape, however we believe to have captured a representative view of each smaller ecosystem within each country. Therefore, the count of entities found and which satisfied our inclusion criteria might serve as a crude measure of the current size of the AI ecosystem. The chart in the figure below presents the number of entities for all countries, and the size of each smaller ecosystem.



It is clear that the UAE houses the highest number of entities with a wide margin from the next-best performers which are Jordan, Lebanon, Egypt, Tunisia, and Saudi Arabia.

Government adoption of AI



Map of Government x AI in MENA

In the [2019 Government AI Readiness Index](#), countries are ranked according to the local government's capacity to capitalise and adopt AI. According to the index, MENA countries are ranked in the following descending order: UAE, Qatar, Tunisia, Oman, Jordan, Saudi Arabia, Kuwait, Morocco, Bahrain, Egypt, Lebanon, Algeria, Yemen, Iraq, Syria, Libya. Palestine was not included in the index.

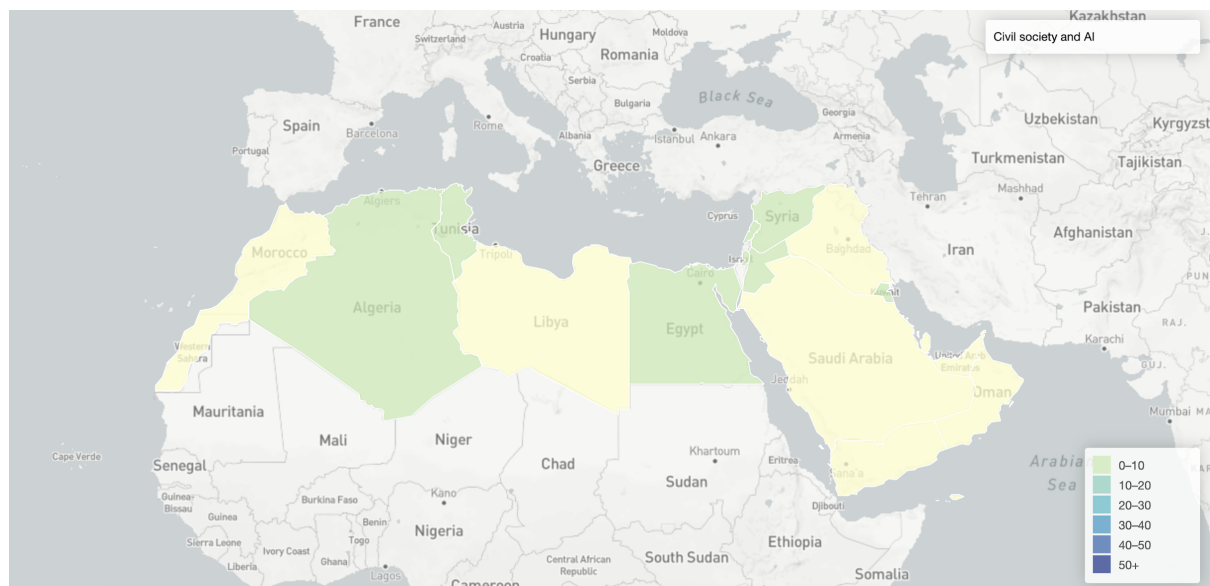
The Gulf states, in particular the UAE and Saudi Arabia, are most committed to a national AI agenda, aggressively pushing their AI capabilities and centring their digital transformation around AI. Both have shown a strong commitment to becoming leaders in the field, the UAE went so far as to appoint a Minister of AI and Saudi Arabia has a dedicated government authority for “Data and Artificial Intelligence”. As oil-rich countries, AI presents an opportunity for diversifying these countries’ economies. However, combined with the countries’ track record of political repression and an absent civic space, this technology put at the hands of governments is a grave threat to human rights. A recent report unveiled that the UAE, Saudi Arabia, and Qatar have all purchased Clearview AI’s facial recognition software.¹² Reports indicate that in the UAE the technology’s being used by the Ministry of Interior’s Child Protection Center in Abu Dhabi, and in Saudi Arabia to Thakaa Center, also known as the AI Center of Advanced Studies, whose clients include the country’s Ministry of Investment.¹³

With the rest of the countries, our findings do not precisely correlate with the aforementioned ranking. We observe a different trend in the rest of the countries which is the focus towards advancing AI as a national education strategy, usually executed through respective ministries of higher education and research. Morocco, Algeria, Egypt, and Syria share this commitment to furthering AI research and education on a local level.

¹² Clearview AI Wants To Sell Its Facial Recognition Software To Authoritarian Regimes Around The World
[<https://www.buzzfeednews.com/article/carolinehaskins1/clearview-ai-facial-recognition-authoritarian-regimes-2>]

¹³ Clearview’s Facial Recognition App Has Been Used By The Justice Department, ICE, Macy’s, Walmart, And The NBA
[<https://www.buzzfeednews.com/article/ryanmac/clearview-ai-fbi-ice-global-law-enforcement>]

Civil society and AI



Map of Civil Society x AI in MENA

The role of civil society organisations (CSOs) working in digital rights is to uphold ethical use of technology on a local level, promoting the development of technology that respects human rights and advances social development. Civil society organisations in the MENA already face political and societal obstacles, and just a few engage with topics at the intersection of technology and human rights and social development, let alone the impact of AI in society.

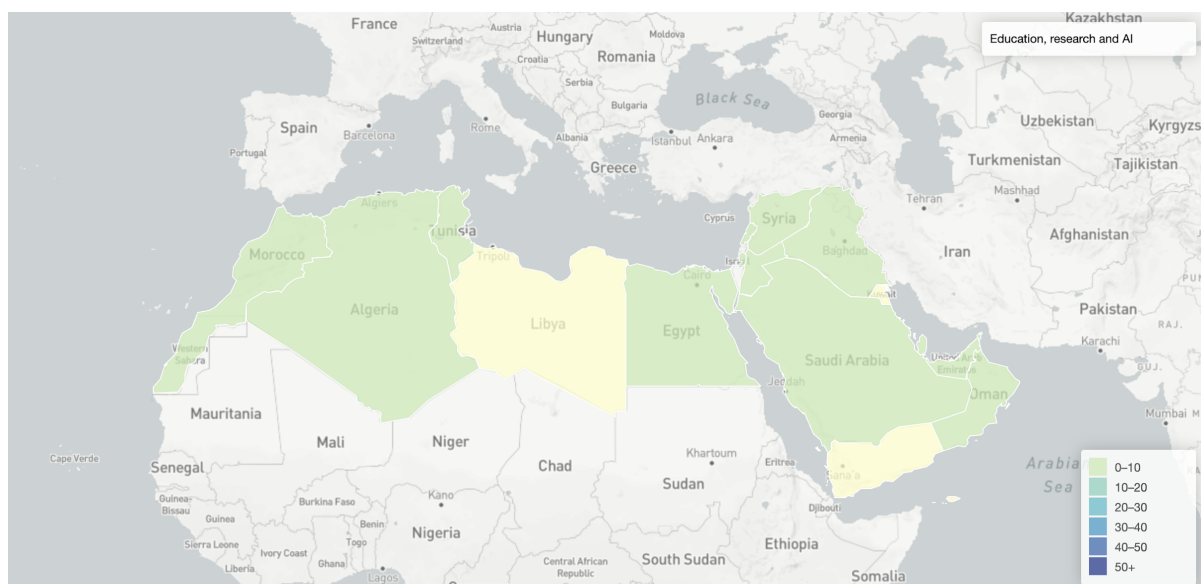
Still, we do observe a few CSOs participating in the AI debate. A couple tend to focus on ICT and AI policy research and analysis such as in Jordan (Jordan Open Source Association) and Palestine (7amleh). While we have pinpointed more governments that have implemented or drafted a policy around AI, we have not observed as many CSOs debating these policies. We assume in this case that a stringent civic space, particularly in absolute monarchies, discourages this type of activity.

Online independent media outlets cover this topic in Egypt (Mada Masr), Jordan (7iber), and Tunisia (Inkyfada and Nawaat). Most of them share a history of being censored in their respective countries, not for covering AI, but for taking controversial

angles in their political coverage. AI is not tackled in more mainstream media outlets in the MENA. While it does not focus on covering AI, Akhbarmeter in Egypt is a media observatory that has implemented AI technology in its fact-checking and credibility rating process. 7amleh also publishes research on how AI poses a threat to Palestinian digital rights.

For the most part, CSOs engage in less contentious activity such as facilitating discussions around the role of AI in local society in the form of debates, symposiums, and conferences, and capacity building in the form of bootcamps and community workshops.

AI education and research in the MENA



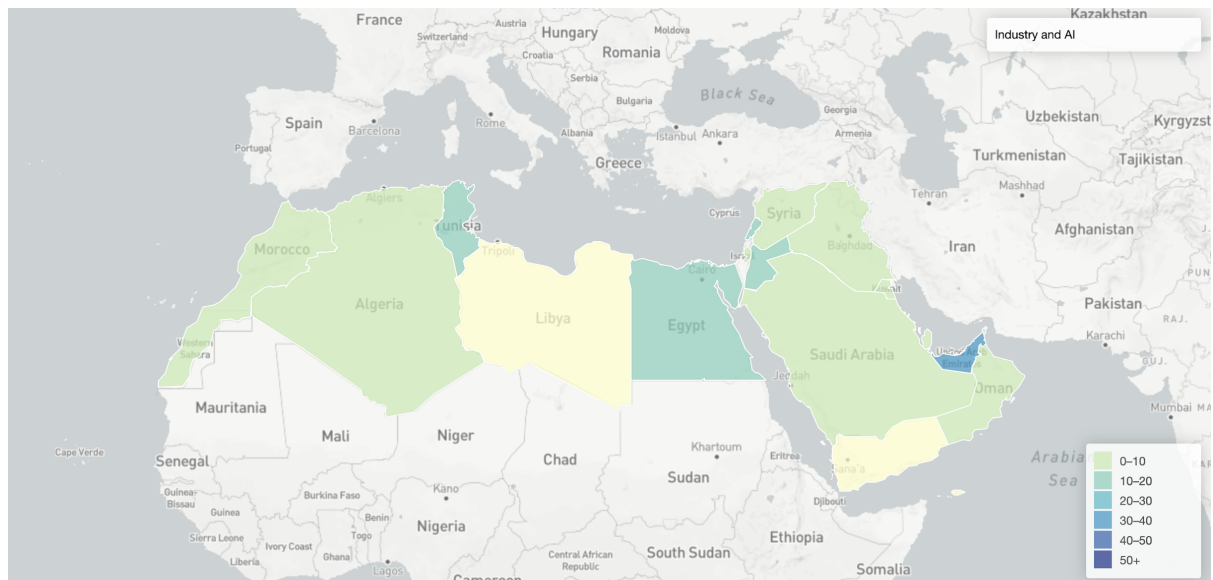
Map of Education and Research x AI in MENA

AI education and research takes three forms in the MENA: 1) some universities offer specialisations within existing computer science curriculums, 2) others are in the process of opening dedicated research centers and faculties focused solely on AI, 3) and one university has dedicated its entire programme to AI research and education been.

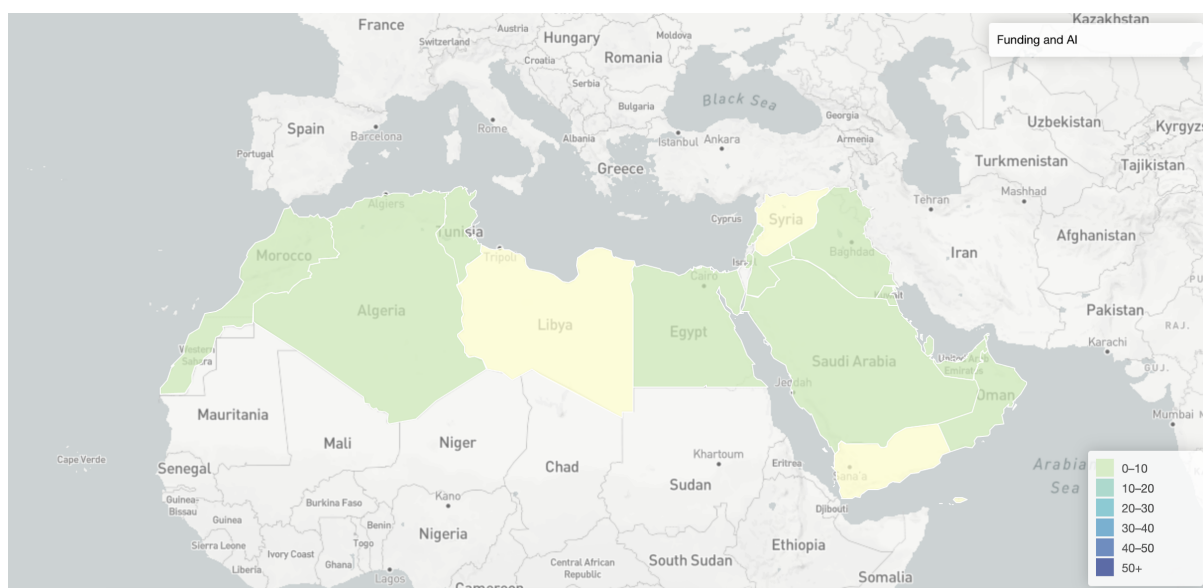
The first two trends are most prevalent in North Africa: in Egypt the University of

Kafrelsheikh announced the opening of the first faculty in Egypt dedicated solely to Artificial Intelligence, and in Morocco the Euro-Mediterranean University of Fez is planning to open a school dedicated to AI education, research, and development. Along with Algeria, AI education and research is the main driving force behind these three North African countries' national AI strategies. It is worth noting however that there's no real measure of education and research quality in the field. Since it was only recently introduced in the region, we cannot extrapolate the quality of AI education and research from university world rankings.

Commercial AI initiatives and funding ecosystems



Map of Industry x AI in MENA



Map of Funding x AI in MENA

Where there's an already existing technology hub (e.g. Dubai, Amman, Cairo, Beirut), we observe many commercial AI initiatives. Another recurring pattern was that economies not rich in natural resources and/or facing political turmoil (e.g. Lebanon, Jordan), will invest in the technology sector. There's a perception that investment in technology innovation can be a viable solution to economic hardships.

Future work

Our recommendations for future work in the mapping of AI ecosystems in the MENA landscape are as follows:

- 1) Future research should be also more granular in its mapping of entities and pinpoint the specific field of AI in question for each individual entity. A finding in this case would be that there are more companies working on Arabic natural language processing whereas the majority of research centres tend to focus on computer vision.
- 2) There's a need for this mapping exercise to be more dynamic and peer-reviewed in order to increase verifiability and representation. This would be done by translating the data points listed in this report into a web-based dashboard which would welcome crowdsourced feedback whether to fix errors or contribute entities.

COUNTRY PROFILES

Algeria

Government AI Readiness Rank	141 out of 194
GDP (PPP) per Capita	\$15,765
Human Development Index	82nd
Population	43,000,000

Algeria is the largest country in terms of area in the MENA region. Rich in natural resources, the republic relies majorly on oil and gas, which have long been the backbone of the economy, accounting for roughly 30% of GDP, 60% of budget revenues, and nearly 95% of export earnings.¹⁴ The country has struggled to diversify its economy due to strict regulation and an emphasis on state-driven growth.¹⁵ It therefore doesn't come as a shock that Algeria ranked low in the Government AI readiness index.¹⁶

Government

In late 2019, the Algerian government and more particularly the Ministry of Higher Education and Scientific Research pushed for the development of a strategic national plan for AI development.¹⁷ ¹⁸ According to government officials, the country has allocated 20 billion Algerian Dinars for scientific research in AI.¹⁹

¹⁴ Africa: Algeria – The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/ag.html>]

¹⁵ Africa: Algeria – The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/ag.html>]

¹⁶ Government AI Readiness Index 2019 — Oxford Insights — Oxford Insights

[<https://www.oxfordinsights.com/ai-readiness2019>]

¹⁷ Bouzid: l'Algérie appelée à développer le domaine de l'intelligence artificielle "le plus vite possible"

[<http://www.aps.dz/sante-science-technologie/98291-bouzid-l-algerie-appellee-a-developper-le-domaine-de-l-intelligence-artificielle-le-plus-vite-possible>]

¹⁸ Ministry of Higher Education and Scientific Research (Algeria)

[https://www.mesrs.dz/accueil/-/journal_content/56/21525/78526]

¹⁹ L'Algérie figure parmi les premiers pays africains dans le domaine de l'intelligence artificielle de l'automatisation

[<http://www.aps.dz/sante-science-technologie/98303-l-algerie-figure-parmi-les-premiers-pays-africains-dans-le-domaine-de-l-intelligence-artificielle-de-l-automatisation>]

Education and research

According to reports by the Ministry, Algeria hosts 116 laboratories that focus, among other things, on AI research. These, according to reports, account for 568 research teams and 67 projects overall. Moreover, the report states that 14 universities offer Master's degrees in the field, of which 5 offer doctoral programs as well.²⁰ Our research could not match the stated numbers however. The ones found are mapped in the table below.

Entity	Ecosystem	Description
GDG Algiers	Civil society	A Google Developers Group in Algeria, gathering local software developers.
Université Badji Mokhtar Annaba	Education and research	An AI research group part of the university's computer science research lab.
Université des Sciences et de la Technologie Houari Boumediène	Education and research	Offers a Master's in Intelligent Systems.
Universite de Jijel Faculte des Sciences Exactes et Informatique	Education and research	Offers a Master's in AI.
School of AI Algiers	Education and research	Local chapter of School of AI company which teaches machine learning and data science.
Université Mohamed Khider Biskra	Education and research	Research group focusing on the social sciences aspect of AI.
École Nationale Supérieure d'Informatique – Laboratoire de la Communication dans les Systèmes Informatiques	Education and research	An information systems and communication research group with AI on the research agenda.
IC-AIRES2020 – International Conference on Artificial Intelligence in Renewable Energetic Systems	Education and research	A conference happening in Algeria at the intersection of AI and renewable energy.
Université Mohamed-Chérif	Education and	Offers Master's in Web and AI.

²⁰ L'Algérie figure parmi les premiers pays africains dans le domaine de l'intelligence artificielle de l'automatisation [<http://www.aps.dz/sante-science-technologie/98303-l-algerie-figure-parmi-les-premiers-pays-africains-dans-le-domaine-de-l-intelligence-artificielle-de-l-automatisation>]

Messaadia Souk Ahras – Département de Mathématiques et Informatique	research	
University of Jijel – Faculté des Sciences Exactes et Informatique	Education and research	Offers Master's in AI.
Centre de Développement des Technologies Avancées	Education and research	National research center for the development of advanced technology, with AI on the agenda.
Sylabs (Entrepreneurial Hub)	Funding	Entrepreneurial hub.
Ministry of Higher Education and Scientific Research	Government	Working on a strategic national AI plan which allocates 20 billion Algerian dollars for AI development.
Algeria 2.0	Industry	A conference for tech enthusiasts and professionals in Algeria.
ISINIAA	Industry	A B2B company offering AI and big data as a service.

Bahrain

Government AI Readiness Rank	100 out of 194
GDP (PPP) per Capita	\$52,129
Human Development Index	45th
Population	1,569,446

Bahrain is the smallest country in the MENA region in terms of both area and population. Despite the government's past efforts to diversify the economy, oil still comprises 85% of Bahraini budget revenues.²¹ Thus, the kingdom is heavily dependent on oil and gas. In recent years, Bahrain has taken steps to become a destination for tech startups, introducing laws and policies to attract foreign tech companies and investments. Despite all this, the Bahraini AI ecosystem industry is not as thriving as one might expect.

Government

According to media sources, the government of Bahrain is drafting a national AI strategy.²² As well, the government announced in 2019 that it intends to pilot AI procurement guidelines for the public sector which were developed by the World Economic Forum Centre for the Fourth Industrial Revolution.²³ According to the Economic Development Board of Bahrain, this framework will build a global knowledge-base that can be used by other governments to sustainably and responsibly introduce AI across their public sector institutions.²⁴

²¹ Middle East: Bahrain – The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/ba.html#Econ>]

²² القائد: نعمل على صياغة استراتيجية وطنية شاملة للذكاء الاصطناعي

[<https://alwatannews.net/article/850139/Bahrain/القائد-نعمل-على-صياغة-استراتيجية-وطنية-شاملة-للذكاء-الاصطناعي>]

²³ Bahrain readies for AI boom with World Economic Forum

[<https://www.thenational.ae/business/technology/bahrain-readies-for-ai-boom-with-world-economic-forum-1.934682>]

²⁴ Bahrain and UK first in the world to pilot new artificial intelligence procurement guidelines across government - Invest in Bahrain

Education and research

In 2019, Bahrain Polytechnic announced it will be launching an AI Academy in collaboration with Microsoft and Tamkeen, the government agency tasked to develop the private sector.²⁵ The AI Academy will uptake 60 students for a short intensive course in essential data science and AI skills. The Bahrain Polytechnic also hosts the annual Khalid bin Hamad Competition for Innovation in Artificial Intelligence for high school and university students.²⁶

Civil society

There's evidence of the presence of a society focused on AI called the Artificial Intelligence Society of Bahrain. According to some sources, the society is tasked to develop the sector on a local level.²⁷

Funding

Along with regional and global funding options, tech startups that leverage AI have local options, with some offering incubation and acceleration services.

Entity	Ecosystem	Description
Artificial Intelligence Society Bahrain	Civil society	Non-profit independent organisation aimed at promoting AI locally.
Bahrain Polytechnic AI Academy	Education and research	First AI academy in Bahrain offering vocational short courses in data science and AI aligned with Microsoft's certification.
Tenmou	Funding	Angel investors investing in scalable, technology-focused companies.

[<https://bahrainedb.com/latest-news/bahrain-and-uk-first-in-the-world-to-pilot-new-artificial-intelligence-procurement-guidelines-across-government/>]

²⁵ Bahrain Polytechnic's 'AI Academy' in collaboration with Tamkeen, Microsoft and Fastlane to support EDB's AI adoption efforts in the Kingdom

[<https://news.microsoft.com/en-xm/2019/10/15/bahrain-polytechnics-ai-academy-in-collaboration-with-tamkeen-microsoft-and-fastlane-to-support-edbs-ai-adoption-efforts-in-the-kingdom/>]

²⁶ AI Hackfest – Empowering the Artificial intelligent generation

[<https://hackfest.polytechnic.bh/>]

²⁷ Bahrain 'can lead region in artificial intelligence' - Invest in Bahrain

[<https://bahrainedb.com/latest-news/bahrain-can-lead-region-in-artificial-intelligence/>]

C5 Accelerate	Funding	A technology investment firm with focus on cloud technology.
Seed Fuel	Funding	A funding program by Bahrain Development Bank, providing startups at seed and early stages with funding, coaching, mentoring, and training.

Egypt

Government AI Readiness Rank	111 out of 194
Investments in AI ('19 EY/Microsoft)	\$241 million
GDP (PPP) per Capita	\$14,023
Human Development Index	116th
Population	100,075,480

Egypt is the most populated country in the MENA region and has one of its largest markets. Although its market size constitutes an attractive business opportunity, the economy is struggling to solve persistent issues and intricate deadlocks. In 2017, Egypt introduced economic reforms that included floating the currency, raising taxes, and minimizing subsidies, which led to a remarkably high inflation of 30%.²⁸ Still, according to PwC, Egypt is looking at 7.7% of its GDP being derived from activities related to AI by 2030.²⁹

Government

Egypt is one of the MENA countries that is strongly and continuously pushing to reap the fruits of AI. As part of the Information Technology Industry Development Agency, the Software Engineering Competence Center (SECC) is focusing on AI skills capacity building within the Egyptian industry. It organized workshops and training sessions for companies and executives, in an attempt to better employ AI in different sectors.

From a policy perspective, Egypt introduced a national AI strategy (2019-2024). Majorly, the strategy focuses on fostering AI education in universities, funding AI

²⁸ The World Factbook – Egypt

[<https://www.cia.gov/library/publications/the-world-factbook/geos/eg.html>]

²⁹ US\$320 billion by 2030? The potential impact of AI in the Middle East

[<https://www.pwc.com/m1/en/publications/documents/economic-potential-ai-middle-east.pdf>]

research, and supporting AI startups³⁰. In November 2019, the prime ministry formed a national council for AI to achieve the goals of the national AI strategy and establish the needed governance for it.³¹ It is also worth noting that the ICT minister appointed a consultant for Artificial Intelligence affairs.³²³³

Education and research

In 2019, the University of Kafrelsheikh announced the opening of the first faculty in Egypt dedicated solely to Artificial Intelligence research.³⁴ Many other universities offer taught programs specialised in AI, including other faculties that combine the study and research of AI as well as general computer science topics.

Civil society

Left-wing independent media outlet, [Mada Masr](#), albeit rarely, does cover topics at the intersection of human rights and technology which includes AI.³⁵

Industry

There are numerous attempts to launch AI-related startups in Egypt. One clear observation about these businesses is the shortage of funding compared to most other MENA countries. So, one might infer that survival would pose a challenge by itself for most of these companies. Nonetheless, these attempts might be the seed to an economy based on AI.

Funding

Several accelerators, incubators, venture capital firms and angel networks work in

³⁰ الاتصالات: استراتيجيات مصر للذكاء الاصطناعي تهدف حل المشاكل القائمة

[<https://amwalalghad.com/2019/09/18/للذكاء-الاصطناعي-استراتيجية-مصر>]

³¹ المجلس الوطني للذكاء الاصطناعي يعقد اجتماعه الأول برئاسة وزير الاتصالات

[<https://www.youm7.com/story/2020/2/7/46215/الاتصالات-وزير-الاتصالات-للدكتور-محمود-بشرى>]

³² جُلستان رضوان... أول مستشار للذكاء الاصطناعي في تاريخ مصر

[<https://almannews.com/للذكاء-الاصطناعي-مستشار-أول-جُلستان-رضوان>]

³³ مصر تستضيف الاجتماع الأول لمجموعة العمل الخاصة بالذكاء الاصطناعي التابعة للاتحاد الإفريقي

[<http://gate.ahram.org.eg/News/2334338.aspx>]

³⁴ Egypt sets its sights on artificial intelligence

[<https://www.cio.com/article/3435110/egypt-sets-its-sights-on-artificial-intelligence.html>]

³⁵ A snapshot of digital rights coverage in the MENA region

[<https://ifex.org/a-snapshot-of-digital-rights-coverage-in-the-mena-region/>]

Egypt to hunt promising technology-related business ideas and small startups. Noticeably, the lens of most funding entities is focused on growing the Egyptian entrepreneurship market, and thus less driven by profit outside the country. This national scope acts as a subsidy for Egyptian tech startups. Despite these opportunities, many of the AI-focused startups mapped face a clear shortage of funding, possibly signaling investors' preference and prioritisation for other tech fields.

Entity	Ecosystem	Description
Akhbarmeter	Civil society	A media observatory and fact-checking platform that applies AI algorithms in its credibility rating process.
Mada Masr	Civil society	Online independent media outlet currently censored in Egypt.
International Conference on Artificial Intelligence, Robotics and Control British University Egypt	Education and research	Conference on AI and Robotics at the British University of Egypt.
Faculty of Artificial Intelligence at Kafrelsheikh University	Education and research	Offers taught programs in AI.
Faculty of Computers and Artificial Intelligence at Cairo Univesity	Education and research	Offers Master's and a PhD.
Faculty of computer and Artificial Intelligence at Banha University	Education and research	Conducts research in AI.
Faculty of Computers and Information at Helwan University	Education and research	Offers specialisations in AI.
Faculty of Media Engineering and Technology at Germany University in Cairo	Education and research	Offers courses in AI on a postgraduate level.
Faculty of Computers & Artificial Intelligence - Beni Suef University	Education and research	Offers specialisations in AI.

American University of Cairo	Education and research	Master's and PhD in Computing, specialities in AI available.
Falak Startups	Funding	A startup accelerator designed to support and empower the next generation of Egyptian entrepreneurs, providing funding and many other services.
Cairo Angels	Funding	An angel investment network, investing in, and supporting early-stage startups in Egypt and across the MENA region.
Endure Capital	Funding	An early stage investment founder-focused venture capital firm.
Algebra Ventures	Funding	A venture capital fund that invests early stage tech startups.
Ezdehar	Funding	A private equity fund manager investing in high growth businesses in Egypt.
Accelero Capital	Funding	An investment and management group focused on telecommunication, digital media, and technology.
AlexAngels	Funding	An angel network that invests in early stage startups, mainly in Alexandria.
SECC	Government	An ICT organization aiming at bridging the gap between the current local technologies and needed technologies for economical, social, and environmental development. SECC organized AI-related workshops as capacity building activities.
Synapse Analytics	Industry	An analytics tool using AI to help organizations leverage their data and make data-driven decisions.
AvidBeam	Industry	A set of tools to extract intelligence information by analyzing thousands of videos in real-time.
MerQ	Industry	A company specialized in developing chatbots as virtual assistants in the financial sector.

Botme	Industry	A platform for building chatbots for businesses and helping manage their business processes.
WideBot	Industry	An Arabic-focused chatbot builder platform.
Webville	Industry	A social rating engine that aggregates and analyses content ratings to help users preview the quality of any link on the web using AI.
HireHunt	Industry	A matchmaking tool that allows recruiters hire suitable candidates faster with the help of AI technology.
Mintrics	Industry	A social media video analytics platform that enables publishers to double their viewership by making data-driven decisions.
DevisionX	Industry	A company that develops computer vision solutions to aid industrial processes.
TA Telecom	Industry	A software development company that builds mobile content platforms and analytic tools, specialising in AI-development.
Autotell	Industry	A platform to communicate with your car, get road analytics, and detect faults, and instant driver advice with an AI personal assistant.

Iraq

Government AI Readiness Rank	156 out of 194
GDP (PPP) per Capita	\$17,952
Human Development Index	120th
Population	38,433,600

Iraq is one of richest countries in the MENA region in terms of natural resources. While it used to be one of the strongest powers and largest economies in the area, ever since the invasion of Iraq in 2003, the republic has suffered from political instability, sectarian violence, and a long series of terrorist attacks.³⁶ The country hasn't had a chance to build a strong infrastructure from which technology companies can set base from and thrive, let alone AI companies. This explains the low score obtained on the Government AI Readiness index.³⁷

Funding

AI funding in Iraq is very scarce. A survey of the entrepreneurship scene in Iraq conducted by Wamda revealed that access to capital is one of the main challenges in the country, since “the financial infrastructure for startups is almost non-existent”.³⁸ A few attempts to grease the wheel can be observed, though.

Entity	Ecosystem	Description
University of Technology - Faculty of Computer Science - AI Branch	Education and research	The AI branch was established in 2002-2003.

³⁶ Middle East: Iraq — The World Factbook
[<https://www.cia.gov/library/publications/resources/the-world-factbook/geos/iz.html>]

³⁷ Government AI Readiness Index 2019 — Oxford Insights — Oxford Insights
[<https://www.oxfordinsights.com/ai-readiness2019>]

³⁸ Iraqis turn to entrepreneurship as corruption hinders economy
[<https://www.wamda.com/2019/01/iraqis-turn-entrepreneurship-corruption-hinders-economy>]

Iraq Tech Ventures	Funding	A venture capital firm that provides minimum investment to approved startups in Iraq and the Middle East.
The Station	Industry	Entrepreneurial hub, with a workspace specific to AI innovation

Jordan

Government AI Readiness Rank	74 out of 194
Investments in AI ('19 EY/Microsoft)	\$60 million
GDP (PPP) per Capita	\$9,406
Human Development Index	102nd
Population	10,407,793

Jordan's economy is among the smallest in the Middle East. With insufficient supplies of water, oil, and other natural resources, the government is heavily reliant on the tertiary sector (tourism and information technology) as well as foreign assistance.³⁹ The Kingdom has prioritised focus on the ICT sector, turning Jordan into one of the main technology hubs in the MENA region.⁴⁰ Along with other countries facing economic challenges and scarcity of resources, Jordan is looking at entrepreneurship as a way out to create new opportunities and thus alleviate unemployment issues. Signaling a change of focus and government priorities, the government recently renamed the Ministry of Information and Communication to become the Ministry of Digital Economy & Entrepreneurship.

Government

The Ministry of Digital Economy and Entrepreneurship in Jordan is drafting a national policy for Artificial Intelligence.⁴¹ The policy tackles AI governance and aims at laying the basis for an AI ethical framework. Nevertheless, it is difficult to foresee the implications on the ground based on the current draft.

³⁹ Middle East: Jordan — The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/jo.html>]

⁴⁰ ICT sector's growth reflection of policies over past 20 years — stakeholders

[<https://www.jordantimes.com/news/local/ict-sectors-growth-reflection-policies-over-past-20-years-%E2%80%944-stakeholders>]

⁴¹ إعلان الاستشارة العامة على السياسة الأردنية للذكاء الاصطناعي لسنة 2020

[<https://modee.gov.jo/content/jordanian-policy-on-artificial-intelligence-2020-715>]

Education and research

In 2017, the Princess Sumaya University of Technology established a Master's programme in Data Science, the first of its kind in the country.⁴² The university also hosts a Women in Data Science event which coincides with the global event.⁴³ In addition, Al-Balqa'a Applied University opened the first AI faculty in the country which offers a specialty in AI and Robotics.⁴⁴

Civil society

The Phi Science Institute, a non-profit that directs its attention to promoting applied scientific research, hosted in 2019 the first Arab AI Summit which brought together startups, investors, and government officials participating in AI under one umbrella.⁴⁵ The Jordan Open Source Association engages more in ICT policy research and analysis.⁴⁶ The association also gathers a community around the field of data science and organises capacity building bootcamps.⁴⁸ Finally, local independent media outlet [7iber](#) has a technology section which regularly discusses AI topics and its intersection with socio political issues.⁴⁹

Industry

Jordan's startup and tech scene is actively engaged in AI. Jordanian startup Mawdoo3 recently raised \$10 million funding from UK-based Kingsway Capital.⁵⁰ The

⁴² PSUT introduces "Data Science" program, the first of its kind in Jordan

[<https://www.psut.edu.jo/content/psut-introduces-data-science-program-first-its-kind-jordan>]

⁴³ Women in Data Science Amman

[<https://www.psut.edu.jo/widsamman>]

⁴⁴ الخطة الدراسية لتخصص الذكاء الاصطناعي والروبوتات

[<https://www.bau.edu.jo/bauar/Colleges/AI/media/AI%20and%20robotics%20arabic.pdf>]

⁴⁵ Arab Artificial Intelligence Summit – Phi Science Institute

[<https://aais.phiscience.co/>]

⁴⁶ Experts gather at Dead Sea to explore scope of Artificial Intelligence

[<https://www.jordantimes.com/news/local/experts-gather-dead-sea-explore-scope-artificial-intelligence>]

⁴⁷ Jordan Open Source Association

[<http://jordanopensource.org/>]

⁴⁸ JOSA Data Science & Engineering Public Group

[<https://www.facebook.com/groups/DataScienceEngIO/>]

⁴⁹ تكنولوجيا Archives 7iber

[<https://www.7iber.com/category/technology/>]

⁵⁰ Jordan's Mawdoo3 closes Series B with \$23.5 million to launch Quora-like Arabic Q&A platform 'Ujeeb'

[<https://www.menabytes.com/mawdoo3-23-5-million/>]

investment was to be used to develop Ujeeb, an Arabic Quora equivalent which makes use of AI technology. Mawdoo3 also lent considerable focus on creating an Arabic conversational agent, Salma. Arabic natural language processing, particularly text-based, is also the focus of chatbot-as-a-service startup, Arabot, who raised \$1 million in the same year.⁵¹ But this is just to name a few, the Arab weather forecasting technology company ArabiaWeather for example incorporates machine learning into its prediction tools and also contributes open source machine learning frameworks.⁵²

Funding

Along with Egypt, Tunisia, and Lebanon, Jordan is betting on entrepreneurship to alleviate economical issues and unemployment. Consequently, there are many support organizations and funding entities that are looking to fund viable tech-startups relative to the market size. As a result, AI startups are finding more support in Jordan than in neighbouring countries.

Entity	Ecosystem	Description
Phi Science	Civil society	A community of scientists interested in education and applied research. Most recently, they organised the Arab AI summit.
7iber	Civil society	An independent media outlet covering technology and society.
City.ai (Amman)	Civil society	A community of AI enthusiasts promoting AI capacity building.
Jordan Open Source Association	Civil society	A non-profit organization that works for the promotion and implementation of the open source principles and digital rights in Jordan.
Royal Scientific Society	Civil society	An independent non-profit science institution that specialize in science-related research, policy, and education. Recently, it launched a

⁵¹ Arabot raises \$1 million seed funding

[<https://www.wamda.com/2019/10/arabot-raises-1-million-seed-funding>]

⁵² ArabiaWeather – GitHub

[<https://github.com/arabiaweather>]

		capacity building program for students titled “Data Intensive Science”.
King Hussein School of Computing - Princess Sumaya University of Technology	Education and research	Offers an MSc in Data Science.
King Abdullah II School of Information Technology - University of Jordan	Education and research	Programs with specialisation in AI.
Faculty of AI - Al-Balqa` Applied University	Education and research	First faculty dedicated to AI in Jordan.
Oasis500	Funding	A seed investment company and business accelerator in MENA in the Tech and Creative Industry spaces.
Beyond Capital	Funding	A network for Entrepreneurs, Finance Entrepreneurs and Angel Investors that aims to promote the entrepreneurial ecosystem. It includes some funding programs for Jordanian startups, usually through its angel investor network.
Silicon Badia	Funding	A venture capital firm that partners with entrepreneurs to solve global-scale problems.
Propeller	Funding	A venture capital firm focused on technology, product and design.
Adam Tech	Funding	A \$5M fund that invests in technology startups.
ISSE	Funding	A private sector managed fund making investments in innovative startups and early stage SMEs, with contributions by the World Bank & Jordan’s Central Bank.
Relativity Fund	Funding	A tech accelerator with limited investments.
Shamal Start	Funding	An accelerator in the north of Jordan, aims to support and enable entrepreneurs in creating sustainable businesses related to the manufacturing/hardware sector.

Dash Ventures	Funding	Venture capital firm that invests in information technology startups.
Ministry of Digital Economy and Entrepreneurship	Government	The Jordanian ministry responsible for the ICT sector, in addition to digital economy and entrepreneurship. Currently, the ministry is drafting a national AI policy.
Arabot	Industry	An intelligent Arabic chatbot to help businesses improve customer experience and deliver an enjoyable journey using AI.
Hareef.ai	Industry	A set of specialized chatbots that enable hotels to offer better and smoother customer experience.
Salma.ai/Mawdoo3	Industry	An AI-based Arabic personal voice assistant.
Labiba	Industry	An AI company specialized in building virtual agents and chatbots. Labiba is now based in UAE.
ViaVii	Industry	A central hub for genuine local experiences that uses AI for its travel recommendation engine and chat bot.
Whiyse	Industry	Impact analysis solution that enables organization to aggregate data from different sources and track impact based on key indicators in real-time. Whiyse raised funding to leverage AI for better results.
Elvatus	Industry	A service to match employers and employees quickly and accurately using AI.
JoVision	Industry	A company that provides complete solutions for industrial tasks including Quality Control and Non Destructive Testing based on computer vision and AI.
Baseet.ai	Industry	A company that aims to simplify the process of building AI applications through introducing a cloud-based, visual development platform to empower businesses to build, train, and deploy

		AI-powered applications.
OpenSooq	Industry	A classified platform that uses machine learning for recommendations.
Open Insights	Industry	A consulting firm that gives recommendations based on data analysis using data science techniques.
ArabiaWeather	Industry	Weather forecasting company that utilises AI technology to improve its prediction technologies.
Progresssoft	Industry	Technology company building real-time payment solutions some of which are built using AI.

Kuwait

Government AI Readiness Rank	79 out of 194
GDP (PPP) per Capita	\$67,891
Human Development Index	57th
Population	4,621,638

With the most valued currency in the world, Kuwait is one of the wealthiest countries in the region. The major revenue source in the country is petroleum, which accounts for half of its GDP, 92% of export revenues, and 90% of government income. In addition, it has more than 6% of global oil reserves.⁵³ Kuwait has failed to diversify its economy or bolster the private sector, because of a poor business climate. The public sector is relatively large, employing more than 70% of Kuwaiti citizens. This could explain the rarity of AI-related activity in this oil-rich country. Nevertheless, Kuwait started, albeit slowly, to leverage the power of technology. Most notably, local investors are increasingly interested in the tech industry.

Government

On a governmental level, Kuwait confirmed the importance of artificial intelligence technology in achieving the objectives of its “New Kuwait 2035” vision,⁵⁴ but hasn’t specified policies and strategies to leverage AI on a national level.

Civil society

In February 2020 the Kuwait Foundation for the Advancement of Science hosted a multi-stakeholder event on Robotics and AI.⁵⁵ The foundation also held a symposium

⁵³ Middle East: Kuwait — The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/ku.html>]

⁵⁴ Communication & Information Technology Regulatory Authority News Details

[<https://citra.gov.kw/sites/en/Pages/NewsDetails.aspx?NewsID=55>]

⁵⁵ KFAS Festival - Robotics and AI

[<http://www.kfasfestivals.com/>]

that studied the impact of AI on science, education, and life overall.⁵⁶

Funding

Kuwait, like most other gulf countries, hosts several venture capital and private equity investment firms. Most relevant funding entities are mapped in the table below. It is worth noting that, compared to other MENA countries, a higher proportion of investment firms do not prioritise Kuwaiti startups and invest agnostically in regional and international companies. Having many wide-scope funds might falsely give the impression of availability of easy funding for the local AI industry, when, in reality, startups need to compete on regional and international levels.

Entity	Ecosystem	Description
Kuwait Foundation for the Advancement of Science	Civil society	Non-profit organisation that holds events related to AI and works to promote its potential in the country.
Erada	Funding	A data-driven venture capital accelerator.
Brilliant Lab	Funding	A startup accelerator that offers funding for promising tech companies.
Impulse	Funding	A venture capital firm that invests in tech companies in the MENA region with focus on Kuwait.
Sharq VC	Funding	A tech-focused venture capital firm based in Kuwait.
Kait	Industry	An AI-powered chatbot to automate businesses' customer service.
Global Markets	Industry	A consultancy firm for market insights about GCC markets, relying on data analysis using AI.
Social Intelligence	Industry	A company offering content and sentiment analysis for social media and other content.

⁵⁶ The Promise of Artificial Intelligence: Present and Future Symposium
[<http://kfas.com/Initiatives/Conferences?id=cfca0f2d-7983-4560-8dae-e6659f6a51ca&cid=05deaadb-16c2-4a4a-836c-09cle8999ef0>]

Lebanon

Government AI Readiness Rank	112 out of 194
GDP (PPP) per Capita	\$15,049
Human Development Index	93rd
Population	6,859,408

Following a lengthy civil war, Lebanon has been struggling to rebuild the country and revive its economy and regional status. Ongoing socio political turmoil meant that the country could only enjoy temporary and short periods of stability. Along with other factors, this undermined various developmental efforts and severely impacted the basic infrastructure, leaving little motive for many businesses to continue operations in the republic.

Most recently, protesters took to the streets demonstrating against the government's alleged corruption. The revolt combined with the government's inaction resulted in a severe financial crisis in the country's banking system and, accordingly, the Lebanese pound saw a significant devaluation. Unfortunately, many of the AI efforts observed in Lebanon are in a state of stagnation and we predict will struggle to survive.

Government

In 2020, the Ministry of State of Investment and Technology Affairs in Lebanon requested the assistance of ESCWA to develop a national strategy on AI for the country⁵⁷.

⁵⁷ Focus Group Discussions on Artificial Intelligence Strategy for Lebanon
[<https://www.unescwa.org/events/discussions-artificial-intelligence-strategy-lebanon>]

Education and research

Recently, the American University of Beirut (AUB) announced a minor in Artificial Intelligence available to all undergraduate students who satisfy prerequisites.⁵⁸ In addition, AUB houses and funds an AI-specialized research group, MindLab, that aims at forwarding applied research. It is also worth noting that Saint Joseph University of Beirut (USJ), with other partners, launched a short program of continuing education focused on new technologies namely: Artificial Intelligence, and Big Data.⁵⁹

Civil society

Digital rights advocacy organisation, [SMEX](#), often organises discussions around the role of AI in society, particularly in the context of a conference.⁶⁰

Industry

Despite the political and financial instability currently facing Lebanon, the country does have a flourishing technology sector with many startups and companies working with AI technology. These companies range from security applications for drone management (Nar), predicting airport runway safety (Oreyeon), to AI-as-a-service (Neumann, Yakshof, BeamBot, Shelvz, Zaka AI, etc.), and startups working on Arabic natural language processing (Fig, Klangoo).

Funding

In the past few years, the tech startup ecosystem was viewed as key to solving many of Lebanon's persistent socio economic issues. Funding and other types of support

⁵⁸ “A new minor in Artificial Intelligence is now available to all UG students @AUB_Lebanon” @akayssi – Twitter
[<https://twitter.com/akayssi/status/1120410659475345409?s=04&fbclid=IwAR27rWZyXanRwASNUztbLvcmeC6tdIp7ZjNjkpp3A7cFpdgHYQbUrxOIMjk>]

⁵⁹ USJ University & BMB Smart launch Artificial Intelligence, Big Data & Ethical Hacking Continuing Education Program
[<https://kamsyn.com/2019/02/22/usj-university-bmb-smart-launch-artificial-intelligence-big-data-ethical-hacking-program/>]

⁶⁰ breadandnet – SMEX
[<https://smex.org/tag/breadandnet/>]

exists for AI startups, despite the country's formidable challenges.

Entity	Ecosystem	Description
SMEX	Civil society	Non-governmental organisation the works to advance digital rights in Lebanon.
MindLab/American University of Beirut	Education and research	A research group that aims at providing state of the art solutions in the field of artificial intelligence with focus on machine learning theory and applications.
American University of Beirut	Education and research	Offers a minor of AI for undergraduate students.
Speed Accelerator	Funding	An accelerator that empowers software startups to succeed and scale through a mentorship and \$30,000 in funding.
BeryTech Fund	Funding	A 51 million US Dollar Beirut-based Venture Capital Fund, funded by Lebanese banks to invest in startups.
Match Capital	Funding	A fund that provides Matching Capital, Equity Guarantee, and Support Programs to a broad range of qualified early-stage business and investors in Lebanon.
Seeders	Funding	A network of angel investors with a mandate to serve the Lebanese entrepreneurial landscape by injecting smart money in early-stage high-risk ventures.
Phoenician Fund	Funding	A venture capital focused on digital innovation and startup ecosystems targeting MENA countries, though most investments are in Lebanon.
Neotic	Industry	A tool for modeling and analyzing financial markets and stocks' value using AI.
Anghami	Industry	Anghami, a streaming service for songs, uses AI in its recommendation engine.

Neumann	Industry	A business intelligence platform to generate insights from enterprise data using AI.
Fig	Industry	A tool to create and customize conversational AI-based chatbots.
Yakshof	Industry	A media intelligence company offering media and social media monitoring & big data analysis.
BeamBot	Industry	A video analytics platform that collects video data and transforms it into actionable insights.
Personafier SAL	Industry	An affordable subscription based content intelligence platform that gives you real time insights on your target persona.
Oreyeon	Industry	An AI-powered solution to optimize airports' runway safety and security.
Dox	Industry	A predictive battery maintenance platform helping EV OEMs reduce warranty costs, battery waste, and sudden failures.
Nar	Industry	An app that automates drone data management at a fraction of the time and cost, detecting specific patterns autonomously.
Shelvz	Industry	Cloud-based data collection and analysis solution to optimize retail processes.
Ideatolife	Industry	A company offering AI development as a service for other businesses.
Beirut AI	Industry	An applied AI community aiming to enable everyone to understand and have access to AI knowledge and tools.
Zaka	Industry	A consultancy firm specialized in AI to help businesses in finding the perfect AI service fit for their needs.
Klangoo	Industry	A Natural Language Processing API to turn unstructured content into valuable

		information for multiple purposes.
DecentraTech	Industry	A company develops AI solutions for other companies.

Libya

Government AI Readiness Rank	183 out of 194
GDP (PPP) per Capita	\$12,100
Human Development Index	110th
Population	6,871,287

Libya is one of North Africa's most resourceful countries. Regrettably, Libya's GDP is projected to shrink by more than 50% in 2020 according to the IMF.⁶¹ A lasting war after the overthrow of Ghaddafi rendered the country inhabitable for many organizations. Therefore, Libya scores the lowest in Oxford's AI readiness index amongst the mapped countries.⁶² Hence, no AI-related entities were found to be operating in Libya.

⁶¹ Libya and the IMF

[<https://www.imf.org/en/Countries/LBY>]

⁶² Government AI Readiness Index 2019 — Oxford Insights — Oxford Insights

[<https://www.oxfordinsights.com/ai-readiness2019>]

Morocco

Government AI Readiness Rank	80 out of 194
Investments in AI ('19 EY/Microsoft)	\$7 million
GDP (PPP) per Capita	\$9,339
Human Development Index	121st
Population	36,472,000

In December 2018, the kingdom hosted a forum on AI in Africa which culminated in the signing of the Declaration of Ben Guerir recognising the potential for AI to accelerate development in the African continent, and promising to promote equitable use of AI across sectors within countries in the continent.⁶³ The easternmost country in the MENA region boasts a vibrant technology sector.⁶⁴

Government

A governmental programme called Al-Khawarizmi - led by the Ministry of Education, Ministry of Industry, National Centre for Scientific and Technical Research, and the Agency for Digital Development - aims to support research in AI, build capacities in the field, leverage economic benefits from integrating AI in industry, and transition into a knowledge economy.⁶⁵ The government also views capacity building in AI as a vocational alternative, opening a school targeting school dropouts and students from precarious social backgrounds.⁶⁶

⁶³ Déclaration finale du Forum sur l'intelligence artificielle en Afrique
[https://en.unesco.org/sites/default/files/ai_outcome-statement_africa-forum_fr.pdf]

⁶⁴ Technologie: Le Maroc, un champion régional
[<https://www.leconomiste.com/article/1028598-technologie-le-maroc-un-champion-regional>]

⁶⁵ Programme Al-Khawarizmi d'appui à la recherche dans le domaine de l'Intelligence Artificielle et ses Applications
[<https://cnrst.ma/images/CNRST/Images/Programme-Al-Khawarizmi-IA.pdf>]

⁶⁶ Métiers de l'Intelligence artificielle. Casablanca va accueillir un centre de deuxième chance
[<https://leseco.ma/metiers-de-l-intelligence-artificielle-casablanca-va-accueillir-un-centre-de-deuxieme-chance/>]

Education and research

Many universities in Morocco offer specialisations in or around AI, on both an undergraduate and a postgraduate level. The majority of these programs focus on big data and data science. In September 2020, the Euro-Mediterranean University of Fez is planning to open a school dedicated to AI education, research, and development.⁶⁷ It is also worthy to note Fatima Roumate, Professor of International Economic Law at Mohammed V University of Rabat, sits on a UNESCO committee mandated to draft recommendations on the ethics of AI.⁶⁸

Industry

McKinsey office in Casablanca has been leading roundtables on digital transformation through AI, starting with the local banking, pharmaceutical, and telecommunications sectors.⁶⁹ Artificial Intelligence is not a nascent sector in Morocco. There exists a multitude of startups working on AI, whether its providing consulting services based on AI, or developing conversational agents, and building more serious technology such as AI-powered UAVs and CCTVs.

Funding

In addition to regional funding programs, some funding entities target tech startups in Morocco. The funding availability, however, is limited in comparison to other MENA countries.

Entity	Ecosystem	Description
Al Akhawayn University	Education and research	Offers the following Bachelor's degrees: Artificial Intelligence and Robotisation, Big Data Analytics, Engineering Decision

⁶⁷ Artificial Intelligence School to Open in Fez

[<https://www.moroccoworldnews.com/2019/07/278026/artificial-intelligence-school-open-fez/>]

⁶⁸ Moroccan Fatima Roumate Joins UNESCO Artificial Intelligence Experts Group

[<http://northafricapost.com/38974-moroccan-fatima-roumate-joins-unesco-artificial-intelligence-experts-group.html>]

⁶⁹ Etude McKinsey : Les bénéfices de l'intelligence artificielle pour le Maroc

[<https://lnt.ma/etude-mckinsey-benefices-de-lintelligence-artificielle-maroc/>]

		Support System
International University of Rabat	Education and research	Offers a five-year combined Bachelor's and Master's in Computer Engineering with a Big Data stream
The Moroccan School of Engineering Sciences	Education and research	Offers a five-year combined Bachelor's and Master's in Computer Engineering with a Big Data stream
Smarti Lab	Education and research	Hosted by the Moroccan School of Engineering Sciences, focusing on smart cities, smart grids, and artificial intelligence
Euro-Mediterranean University of Fez	Education and research	Planning to open a school dedicated to artificial intelligence education, research, and development
University of Cadi Ayyad	Education and research	Offers a Master's in Data Science and another one in Big Data and Cloud Computing
Maroc Numeric Fund	Funding	Venture capital firm that invests in promising technology startups
Blue Mango Capital	Funding	Venture capital firm that invests in several sectors including Internet-related businesses.
Al-Khwarizmi program	Government	Program led by multiple governmental agencies and ministries to support research in AI and leverage its economic benefits
Atlan Space	Industry	Develops AI-embedded unmanned aerial vehicles to replace ground control
Elum Energy	Industry	Energy company that provides data-centric energy efficiency tracking.
AI Inside	Industry	Offers optimisation, automisation, and consulting services to companies
Nimble Ways	Industry	Offers optimisation, automisation, and consulting services to companies
DialTechnologies	Industry	Offers AI consulting services and develops custom conversational agents (voice and

		text) for clients
Pillioty	Industry	Creates AI products such as Dust-Out to analyse the soiling ratio for PV panels and DeePic a CCTV camera embedded with computer vision
InDataCore	Industry	Built a facial and pattern recognition application to accelerate identification of persons
Mosaiclab	Industry	Made Konta an application that reads paper receipts and bills
Medasys	Industry	Established Morocco's first datacenter

Oman

Government AI Readiness Rank	59 out of 194
GDP (PPP) per Capita	\$47,366
Human Development Index	47th
Population	4,829,473

Like fellow gulf countries, Oman's economy is heavily dependent on oil and gas.⁷⁰ Generally speaking, Oman's foreign policy is neutral, making it less susceptible to the persistent and emerging conflicts faced by its neighbours. This unique position can be translated into a viable economical advantage. The AI ecosystem in Oman is however small. Despite a curiously high rank for government AI readiness, there's a vast and untapped opportunity for capitalising in AI.

Government

The Ministry of Technology & Communications signed a memorandum of understanding with a private technology company to raise awareness of AI's potential in boosting the economy.⁷¹ The Ministry also partnered with the Ministry of Health on implementing AI expertise in the health sector. As a first project the partnership looked to improve and quicken breast cancer diagnosis, a common disease in the sultanate, via AI technology.⁷² Finally, the Digital Oman 2030 vision does mention AI as one of the main pillars, with little evidence of a strategy.⁷³

⁷⁰ Middle East: Oman — The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/mu.html>]

⁷¹ لتنفيذ أولى مشاريع الذكاء الاصطناعي في عمان، مذكرة تفاهم بين وزارة التقنية والاتصالات ومجلس البحث العلمي وشركة الخليج للحاسبات الآلية

[https://www.ita.gov.om/ITAPortal_AR/MediaCenter/NewsDetail.aspx?NID=60968]

⁷² MOH - MTC Launch Artificial Intelligence in Breast Cancer Detection

[<https://www.ita.gov.om/ITAPortal/MediaCenter/NewsDetail.aspx?NID=80907>]

⁷³ عمان الرقمية 2030

[<https://oman.om/wps/portal/index/DigitalOman2030>]

Funding

Mostly in the form of venture capital, funding is available in Oman for promising technology startups. Yet, these funds also invest outside Oman due to the shrinking enterprising ecosystem.

Entity	Ecosystem	Description
German University of Technology in Oman	Education and research	Master of Science in Computer Science with a specialisation option in Data Science.
IDO Investments	Funding	A technology investment firm that invests in established companies with innovative products or solutions.
Phaze Ventures	Funding	A venture capital firm that aims at transforming the region by unlocking the potential startups.
Oman Technology Fund	Funding	A fund that offers a program that covers incubation, acceleration and venture capital.
Datalytics24	Industry	An online monitoring and analytics of web content and social media.

Palestine

GDP (PPP) per Capita	\$2,900
Human Development Index	119th
Population	5,051,953

Though a non-member observer of the United Nations, the State of Palestine is effectively under occupation and is largely dependent on Israel in terms of trade and movement. To make matters worse, the Gaza strip is under an ongoing blockade, further stifling high-scale business operations. Despite the geopolitical hardships, an AI ecosystem is still visible.

Education and research

There's faint investment in AI education and research with only some universities having demonstrated interest in the field. Our research found one Master's and one apprenticeship programme.

Civil society

Civil society organisation, 7amleh, studies and advocates against the use of AI technology that obfuscates Palestinians' digital rights.⁷⁴

Industry

There's evidence of a young AI industry in Palestine. Most considerably, Paltel which is the largest telecommunications operator in Palestine has ventured into cloud computing, building the state's first data center⁷⁵ and has recently opened a second

⁷⁴ Hashtag Palestine 2019

[https://7amleh.org/storage/Hashtag_Palestine_2019_English_20.4.pdf]

⁷⁵ Palestinian Phone Company Offers Cloud Computing From Ramallah

[<https://www.bloomberg.com/news/articles/2019-05-08/palestinian-phone-company-offers-cloud-computing-from-ramallah>]

data center.⁷⁶ Unique to the region, RedCrow Intelligence provides a security and threat alert system via a mobile application and Web dashboard.⁷⁷ The system makes use of Arabic natural language processing and predictive analytics. AI is core to many tech startups: AICom builds chatbots specialised in e-commerce⁷⁸ and Wikaya is an AI-powered digital health application.⁷⁹

Funding

Despite the various market barriers in Palestine, funding opportunities are available in the form of tech incubators and venture capital funds. This probably stems from the perception that tech innovation is a viable solution to economic hardships brought by political conflict.

Entity	Ecosystem	Description
Zamleh	Civil society	Non-profit organisation that works to promote digital rights for Palestinians.
Arab American University	Education and research	Offers a Master's in Data Science and Business Analytics.
An-Najah National University	Education and research	Offers a Computer Science apprenticeship with a specialisation in Artificial Intelligence.
Birzeit University	Education and research	Hosted the first Palestine Creative AI Week which culminated in a hackathon.
Rawabi Tech Hub/Bader	Funding	A technology fund of seed capital, with the goal of supporting technology and ICT-related start-ups, fostering growth and expansion through direct investment.
Siraj	Funding	A dedicated Palestinian private equity fund manager, that invests in Tech company among other sectors.

⁷⁶ Paltel Group opens second Palestinian data center

[<https://www.datacenterdynamics.com/en/news/paltel-group-opens-second-palestine-data-center/>]

⁷⁷ Realtime Intelligence – RedCrow

[<https://www.redcrow.co/realtime-intelligence>]

⁷⁸ AICom

[<https://www.aicom.ai/>]

⁷⁹ Wikaya

[<https://www.wikayamed.com/technology>]

Ibtikar Fund	Funding	Ibtikar invests in good ideas of Palestinian entrepreneurs as seed investments.
Paltel	Industry	Largest telecommunications company in Palestine building the state's first and second data centers.
Progeneer	Industry	Technology company offers big data solutions.
RedCrow Intelligence	Industry	Signals intelligence company that provides a security and threat alert system via a mobile application and Web dashboard.
AICom	Industry	Provides chatbots specialised for e-commerce which can be integrated with Facebook Messenger and online shops.
Wikaya	Industry	A digital health application that collects data from smartphones and wearables to generate recommendations for health and lifestyle changes in order to prevent chronic diseases.

Qatar

Government AI Readiness Rank	42 out of 194
GDP (PPP) per Capita	\$138,910
Human Development Index	41st
Population	2,641,669

Rich in natural resources and a small population results in Qatar boasting the highest GDP per Capita in the world. The small country owns 13% of the world total natural gas reserves globally.⁸⁰ The AI ecosystem in Qatar remains dormant despite having solid grounds from which to build a thriving sector.

Government

The Qatar Center for Artificial Intelligence (QCAI), a research center within Hamad Bin Khalifa university, published a blueprint of a “National Artificial Intelligence Strategy For Qatar”. The blueprint aims at informing and advising Qatar’s leadership on AI, its potential and challenges, and to propose a path forward.⁸¹ In late 2019, the Minister of Transport and Communications announced the adoption of Qatar's National Artificial Intelligence Strategy, based on QCAI’s work.⁸²

Education and research

Most prominently, Qatar Computing Research Institute is leading the initiatives in both supporting AI education and conducting AI research. To our surprise, our research has not found additional AI education and research activity in the kingdom.

⁸⁰ Middle East: Qatar — The World Factbook

[<https://www.cia.gov/library/publications/the-world-factbook/geos/qa.html>]

⁸¹ National Artificial Intelligence Strategy for Qatar

[https://qcai.qcri.org/wp-content/uploads/2019/02/National_AI_Strategy_for_Qatar-Blueprint_30Jan2019.pdf]

⁸² Qatar's National Artificial Intelligence Strategy Launched

[<https://portal.www.gov.qa/wps/portal/media-center/news/news-details/qatarsnationalartificialintelligencestrategy/launched>]

Industry

Until today, Qatar's startup ecosystem is small in size, relative to the country's spending power. We observe faint activity, including an Arabic chatbot⁸³ and a B2B big data service.⁸⁴

Entity	Ecosystem	Description
Qatar Center for Artificial Intelligence	Education and research	A center that aims to create an enabling environment for collaborative research and development, and promote AI innovations for betterment of human society. It is part of Qatar Computing Research Institute, Hamad bin Khalifa University.
Digital Incubation Center	Funding	An incubator for early stage tech startups, providing work space, mentorship and funding. It is part of the Ministry of Transportation and Communication and funding is provided through Qatar Development Bank.
Doha TechAngels	Funding	A private angel fund providing seed funding for early stage technology startups.
Qatar Science & Technology Park	Funding	An incubator and accelerator (innovation hub) for tech startups.
Dxwand	Industry	A sales chatbot that integrates with different channels, powered by AI.
Tasmo/ADGS	Industry	A cost-effective, AI-based tool that understands the content of your data and automatically correlates findings with other data sources.

⁸³ DXWand
[<https://dxwand.com/>]

⁸⁴ TASMO Artificial Intelligence and Big Data
[<http://www.tasmo.ai/>]

Saudi Arabia

Government AI Readiness Rank	78 out of 194
Investments in AI ('19 EY/Microsoft)	\$585 million
GDP (PPP) per Capita	\$56,817
Human Development Index	38th
Population	34,218,169

Saudi Arabia is the only Arab state to be part of the G20 countries and is the largest economy in the MENA region. The Saudi economy relies heavily on oil production, being the largest oil exporter in the world.⁸⁵ In its plan to diversify its economy from oil and gas, KSA is investing heavily on AI.⁸⁶ Nevertheless, with the vision 2030 plan set in place, the infrastructure for the AI industry, and tech industry in general, can possibly be realized in an accelerated fashion.⁸⁷

In September 2020, Saudi Arabia will be hosting the Global AI Summit. The summit, which is organized by the Saudi Data and Artificial Intelligence Authority (SDAIA), strives to be the world's premier platform for dialogue that brings together stakeholders from public sector, academia, and private sector, including technology companies, investors, entrepreneurs and startups to shape the future of Artificial Intelligence.⁸⁸

⁸⁵ Rankings about energy in the World

[<https://www.eia.gov/international/overview/world?topL=exp>]

⁸⁶ Artificial Intelligence, Neom and Saudi Arabia's Economic Diversification from Oil and Gas

[<https://onlinelibrary.wiley.com/doi/full/10.1111/1467-923X.12794>]

⁸⁷ Saudi Vision 2030

[<https://vision2030.gov.sa/en>]

⁸⁸ Global AI Summit

[<https://www.theglobalaisummit.com/>]

Government

Saudi Arabia established a government agency called the Saudi Data and Artificial Intelligence Authority (SDAIA) on 30 August 2019.⁸⁹ SDAIA's responsibilities include developing national data and AI strategies, overseeing the execution of these strategies, and raising awareness of data and AI and communicating achievements locally and globally. SDAIA has three sub government bodies, which include:

- The National Data Management Office (NDMO): the main data and AI regulator responsible for data and AI regulations, standards, and compliance.
- The National Information Center (NIC): the main operator of national data infrastructure and the key provider of government analytics and AI-powered insights.
- The National Center for Artificial Intelligence (NCAI): the driver of advancement in AI innovations, providing AI strategic advice to the government, and promoting AI education and awareness.⁹⁰

Saudi Arabia's Vision 2030 makes it clear that digital transformations are central to realising the vision. Based on that, one can expect sizable investments in AI in the coming years. A large part of these investments will take place within the NEOM project, which is planned to be a smart and automated city that revolves around AI technologies.

Education and research

The kingdom boasts advances in AI education and research. King Abdullah University of Science and Technology (KAUST) is a center for AI related research and development. The university houses several research groups led by internationally recognized specialists. In comparison to the region, KAUST's research groups are well-funded and thus can recruit notable academics in the field and invest in high-cost equipment. Finally, the university has a machine learning hub for

⁸⁹ الهيئة السعودية للبيانات والذكاء الاصطناعي

[<https://sdaia.gov.sa>]

⁹⁰ AI Policy - Saudi Arabia

[<https://futureoflife.org/ai-policy-saudi-arabia/>]

educational material.⁹¹

In addition to KAUST, King Saud University and King Abdulaziz University exhibit some research efforts related to AI.⁹² As well, on a national level, Thakaa, a national AI research center aims to become a world-class center of excellence in enabling AI solutions.⁹³ There are reports that Thakaa has purchased Clearview AI's advanced facial recognition software, which is known to be used by law enforcement agencies to advance surveillance capabilities.⁹⁴

Industry

Only a handful of companies in Saudi Arabia are working on AI-based products. The size of the commercial AI ecosystem is too narrow relative to the country's large market size and strong purchasing power. This situation, however, is subject to change, especially with the rapid transformations and economic restructuring that the kingdom is going through.

Entity	Ecosystem	Description
Image and Video Understanding Lab/KAUST	Education and research	A research group focusing on interesting problems that arise in computer vision, including activity recognition/detection, robust representations of objects for tracking and recognition, scene understanding from 3D data, image annotation.
Vision-CAIR/KAUST	Education and research	An research group that covers both Vision Content AI research and Vision- Creative AI research.

⁹¹ Courses - ML @ KAUST

[<https://ml.kaust.edu.sa/courses.html>]

⁹² Artificial Intelligence for 2030 vision (Research Group)

[<https://ksaeedi.kau.edu.sa/Pages-ResearchGroupsEN.aspx>]

⁹³ AI Center of Advanced Studies

[<https://thakaa.edu.sa/en/>]

⁹⁴ Senators Are Probing Clearview AI On The Use Of Facial Recognition By Gulf States And International Markets

[<https://www.buzzfeednews.com/article/ryanmac/senators-markey-wyden-clearview-ai-facial-recognition>]

Peter Richtárik Group/KAUST	Education and research	A group focused on different machine learning related topics.
Peter Wonka Group/KAUST	Education and research	A research group interested in computer graphics, visualization, and remote sensing with a focus on modeling and analysis of urban and geospatial data.
Artificial Intelligence for 2030 Group/KAU	Education and research	A research group that aims to produce digitally applied research using Artificial Intelligence in line with the digital transformation 2030 initiative.
Thakaa	Education and research	A specialized center in research, development and innovation of AI solutions
Vision VC	Funding	A Venture Capital firm investing in startups in seed and early stages.
Saudi Technology Ventures	Funding	A venture capital fund that backs and scales the region's most exciting and disruptive technology companies
Raed Ventures	Funding	An early-stage venture capital firm that partners with exceptional founders building transformative companies
STC Ventures	Funding	A venture capital fund whose anchor investor is the Saudi Telecom Company. Mainly, the fund focuses on Tech companies.
Sirb	Funding	An network of investors that provides early stage funding.
Riyad Taqnia Fund	Funding	A venture capital fund investing in technology startups around the globe.
Derayah	Funding	A mutual fund that invests in growth and early stage innovative startups.
Nama	Funding	A seed stage venture capital fund focused on fueling innovation in the MENA region, particularly in Saudi Arabia.
Daal	Funding	A venture capital fund that offers its investors a chance to participate in

		high-growth opportunities unique to the IT sector
Riyadh Valley Co	Funding	A venture capital fund that focuses on the ICT sector. It is the investment arm of King Saud University.
Saudi Authority for Data and Artificial Intelligence	Government	A Governmental Entity to lead the transformation towards a national economy based on data and AI.
National Information Center	Government	The main operator of national data infrastructure and the key provider of government analytics and AI-powered insights
National Data Management Office	Government	The main data and AI regulator responsible for data and AI regulations, standards, and compliance
National Center for AI	Government	The driver of advancement in AI innovations, providing AI strategic advice to the government, and promoting AI education and awareness
Quant Data & Analytics	Industry	A tech start-up specializing in data science and providing data analysis and artificial intelligence services
Lucidya	Industry	A social media analytics tool that allows businesses to monitor and analyze all tweets, posts and articles about their brands using AI, allowing better decision.
Hazen.ai	Industry	A solution to detect dangerous driving behavior through video analysis & intelligent algorithms based on traffic cameras.
Fihm.ai	Industry	An educational/consultancy platform for AI.

Syria

Government AI Readiness Rank	175 out of 194
GDP (PPP) per Capita	\$2,900
Human Development Index	154th
Population	17,500,657

The Arab Spring in Syria transformed into an ongoing civil war. As a result, the economy was severely affected, shrinking more than 70% from 2011 to 2017.⁹⁵ The war has also caused a persistent internal and external refugee crisis, affecting more than half of the population according to UNHCR.⁹⁶ The country still demonstrates, albeit minimal, activity in the ICT sector including AI.

Government

At the International Conference on Artificial Intelligence and Education in Beijing in May 2019, former Syrian Minister of Education Imad al-Azab announced that a National Centre for AI is under work.^{97 98}

Education and research

The University of Damascus has a department of AI and Natural Language Processing research.⁹⁹ The Arab International University offers an engineering degree specialising in AI.¹⁰⁰ And the Higher Institute of Applied Science and Technology

⁹⁵ Middle East: Syria — The World Factbook

[<https://www.cia.gov/library/publications/resources/the-world-factbook/geos/sy.html>]

⁹⁶ Refugee Statistics

[<https://www.unrefugees.org/refugee-facts/statistics/>]

⁹⁷ وزارة التربية

[<http://moed.gov.sy/site/التعليمية-المنشآت-وتأهيل-الاصطناعي-في-مجال-الذكاء-الاصطناعي-وتأهيل-المنشآت-التعليمية>]

⁹⁸ العزب: العمل جار في سوريا على إحداث مركز وطني يهتم بالذكاء الاصطناعي

[<https://www.alwatanvoice.com/arabic/news/2019/05/19/1244993.html>]

⁹⁹ قسم الذكاء الصناعي واللغات الطبيعية

[<http://damascusuniversity.edu.sy/ite/index.php?lang=1&set=3&id=415>]

¹⁰⁰ Arab International University

conducts research in the field and offers postgraduate degrees in Data Science.¹⁰¹

Civil society

The Berlin-based NGO Syrian Researchers network brings together Syrian expatriate academics under one umbrella and works to increase the visibility of Syrian academic research output in various fields including AI.¹⁰² Moreover the Syrian Computer Society engages with many topics in computer science, AI among them.¹⁰³

Industry

Not many companies leverage AI technology or build it except for a few entrepreneurs who are building an Arabic customer support chatbots Mujeeb¹⁰⁴, a local ride-sharing application Wasilni,¹⁰⁵ and food ordering application BeeOrder¹⁰⁶, and an educational toy based on Arabic speech recognition Votek.¹⁰⁷ Though based in Dubai, Votek's founder is Syrian. Votek successfully secured \$1M investment in 2017.¹⁰⁸ Mujeeb's co-founders put their idea to market through Jusoor's entrepreneurship program, after winning their 2017 competition.¹⁰⁹

Entity	Ecosystem	Description
Syrian Researchers	Civil society	Berlin-based researchers network brings together Syrian expatriate academics.

[<https://www.aiu.edu.sy/ar/College31/Page168/التخرج-والاختصاصات>]

¹⁰¹ المعهد العالي للعلوم التطبيقية والتكنولوجيا | المعهد العالي للعلوم التطبيقية والتكنولوجيا

[<https://hiast.edu.sy/>]

¹⁰² الذكاء الصناعي – الباحثون السوريون

[<https://www.syr-res.com/subcat/197.html>]

¹⁰³ كتب معلوماتية | Syrian Computer Society

[<http://www.scs.org.sy/?q=ar/scs/publications/itbooks>]

¹⁰⁴ Young entrepreneurs in Syria: 'they'll rebuild what the war has destroyed'

[<https://www.theguardian.com/small-business-network/2017/may/30/syria-young-entrepreneurs-war-jusoor-mujeeb-techstars-unfpa-startup-weekend-remmaz>]

¹⁰⁵ وصلني

[<https://wasilni.com/>]

¹⁰⁶ BeeOrder

[<http://www.beeorder.com/>]

¹⁰⁷ Votek | Arabic Voice Recognition Technology

[<http://votek.me/>]

¹⁰⁸ Votek and Loujee secures \$1M investment

[<https://www.wamda.com/2017/05/votek-loujee-secures-1m-investment>]

¹⁰⁹ Entrepreneurship Program – Jusoor

[<https://jusoor.syria.com/programs/entrepreneurship-program/>]

University of Damascus	Education and research	Has a department of AI and Natural Language Processing research.
Arab International University	Education and research	Offers an engineering degree specialising in AI.
Higher Institute of Applied Science and Technology	Education and research	Conducts research in the field and offers postgraduate degrees in Data Science.
Ministry of Education	Government	Working on National Centre for AI.
Mujeeb	Industry	Building Arabic customer support chatbots.
Wasilni	Industry	Local ride-sharing application that utilises AI.
BeeOrder	Industry	Local food ordering application.
Votek	Industry	Educational toy utilising Arabic speech recognition.

Tunisia

Government AI Readiness Rank	54 out of 194
GDP (PPP) per Capita	\$12,862
Human Development Index	91st
Population	11,722,038

Since the revolution of 2011, Tunisia has been a beacon for democracy and pluralism in the MENA region.¹¹⁰ Economically, the country suffered a dramatic drop due to instability and uncertainty. The startup scene was thought of as one of the keys to ameliorate the economic stagnation. As a result, decision makers approved the Startup Act, which aims at encouraging and stimulating new business formation.¹¹¹

In light of these policies, the AI ecosystem in Tunisia is remarkably sizable, especially with respect to GDP and population size. Serious efforts related to AI have been made within various sectors, spanning products and services, research, funding opportunities, and government policies and strategies. Accordingly, the AI sector can continue to grow and is definitely a close to hand opportunity for the country.

Government

From a policy perspective, the Secretary of State for Research in Tunisia formed a task force to develop a National AI Strategy.¹¹² In theory, the strategy aims to facilitate the emergence of an AI ecosystem that solidifies equitable and sustainable development and stimulates job creation. Yet, there is no clear timeline for publishing and adopting the awaited strategy.

¹¹⁰ WJP Rule of Law Index 2020

[https://worldjusticeproject.org/sites/default/files/documents/WJP-ROLI-2020-Online_0.pdf]

¹¹¹ Startup Act Tunisie

[<https://www.startupact.tn>]

¹¹² AI Index 2019 Report

[https://hai.stanford.edu/sites/g/files/sbiybj10986/f/ai_index_2019_report.pdf]

Education and research

A couple of universities in Tunisia offer Master's degrees in a field related to AI while a couple of others offer specialities on an undergraduate level. Most recently, the National Institute of Applied Sciences Tunisia which is part of Carthage University lent its expertise to developing a computer vision application that could support the diagnosis of COVID-19 from an XRay image.¹¹³

Civil society

The Tunisian Association for AI was founded in 2005 to facilitate discussions and projects around the impact of AI in society.¹¹⁴ As well as communicating the benefits of AI and ethical use of the technology, the association has launched a debating platform on AI in various sectors such as transport, health, and finance.¹¹⁵ The association also works in AI capacity building. Moreover, independent media outlets, Inkyfada¹¹⁶ and Nawaat¹¹⁷, also highlight issues around AI's role in society.¹¹⁸

Industry

Efforts to grow the entrepreneurship scene in Tunisia resulted in serious and profitable AI-related work. Several companies, such as InstaDeep, Datavora and Expensya, started in Tunisia, secured millions of dollars of funding, and proved solid profit potential. According to Wamda, InstaDeep has raised US\$7 million in Series A funding from AfricInvest and Endeavor Capital to expand AI opportunities in Africa.¹¹⁹

¹¹³ L'intelligence artificielle de la Tunisie face au Coronavirus

[<https://technologie-web.com/coronavirus/lintelligence-artificielle-de-la-tunisie-face-au-coronavirus/>]

¹¹⁴ L'Association Tunisienne pour l'Intelligence Artificielle

[<http://www.atia.org.tn/>]

¹¹⁵ Farah Ktata vice présidente de l'Association tunisienne pour l'Intelligence artificielle, présente le ATIA Talk sur le transport intelligent

[<https://www.facebook.com/pageofficielleRTCI/videos/836326856883962/>]

¹¹⁶ Inkyfada – Média indépendant basé à Tunis

[<https://inkyfada.com/fr/>]

¹¹⁷ Nawaat

[<https://nawaat.org/portail/>]

¹¹⁸ A snapshot of digital rights coverage in the MENA region

[<https://ifex.org/a-snapshot-of-digital-rights-coverage-in-the-mena-region/>]

¹¹⁹ Tunisia's InstaDeep raises \$7 million in Series A funding

[<https://www.wamda.com/2019/05/tunisia-instadeep-raises-7-million-series-funding>]

Funding

Different incubators, accelerators, and venture capital funds target Tunisian tech startups, providing them with capital and other types of support. These startups can also turn to regional funds (mapped in the appendix), that constitute viable funding options.

Entity	Ecosystem	Description
Inkyfada	Civil society	Independent media outlet based in Tunis.
Nawaat	Civil society	Independent collective blog blocked in Tunisia until 2011.
Tunisian Association for AI	Civil society	Non-profit organisation which aims to facilitate discussions and projects around the impact of AI in society
AI School	Education and research	Certification centre for AI
University of Paris-Dauphine in Tunis	Education and research	Offers a two-year Master's degree in Big Data
Universite Centrale	Education and research	Offers two-year Master's in AI Engineering
Polytech International	Education and research	Offers Bachelor's in Big Data Engineering and Business Intelligence
National School of Computer Sciences (part of University of Tunis)	Education and research	Offers specialties in AI
Higher National Engineering School of Tunis (member of University of Tunis)	Education and research	Offers a Master's in Advanced Engineering of Robotized Systems and Artificial Intelligence
National Institute of Applied Sciences Tunisia (part of Carthage University)	Education and research	Conducts research on applied AI
GoMyCode	Funding	A developer community focuses on technical training and capacity building in the Middle

		East.& Africa.
WIKI START UP	Funding	A private startup incubator in Tunisia, targeting promising tech businesses.
UGFS	Funding	An asset management company in Tunisia that invests in companies that makes positive contribution to the Tunisian economy
Capsa Capital	Funding	An asset management company that invests in innovative new businesses.
Gestion	Funding	A mutual fund that invests in Tunisian Startups and SMEs
National Agency for Scientific Research Promotion	Government	A government entity that organized a workshop to come up with an action plan for a national AI strategy for Tunisia.
Barac	Industry	A company that helps organizations detect fraud and cyber-attacks through encrypted data using AI.
Seabex	Industry	An e-monitoring and smart automation system that helps farmers find the right balance of water consumption needed to get the better quality and quantity production
Digi Smart Solutions	Industry	An IoT smart water management solution, powered by artificial intelligence.
WebRadar.me	Industry	A solution covering market research and digital marketing intelligence services for marketers and decision makers.
InstaDeep	Industry	Analytics-based solutions that allow enterprises to have data insights, realize potential value, and increase efficiency using artificial intelligence.
Wattnow	Industry	An energy-tracking system that enables companies to acquire actionable insights on electricity usage trends, identify waste sources, and maintain optimal energy use.
Fabskill	Industry	A web platform offering an innovative

		recruitment process based on artificial intelligence, video interviews and collaborative rating of candidates.
Deepera	Industry	A smart AI-based solution that provides services and insights for financial organizations.
Expensya	Industry	An expense management software that streamlines how to manage professional expense reports.
Datavora	Industry	A solution that analyzes the market supply after fetching fresh data from hundreds of websites and marketplaces to allow better decision making for e-commerce businesses.
Madar consulting	Industry	Providing consultation for acquiring big data solutions, reducing the cost and complexity through an innovative, highly adaptable, automated platform.
Enova ROBOTICS	Industry	A company specialized in robot design and manufacturing with use cases in industry, education and security.

United Arab Emirates

Government AI Readiness Rank	19 out of 194
Investments in AI ('19 EY/Microsoft)	\$2.1 billion
GDP (PPP) per Capita	\$70,441
Human Development Index	35th
Population	9,599,353

Through its policies & long-term planning and execution capability, the United Arab Emirates (UAE) has secured its position as the region's technology center in the last decade. Despite its extreme reliance on oil, the UAE's economy is considered the most diversified among the gulf states,¹²⁰ making it more resilient to unforeseen circumstances and thus less alarming for businesses in the long run. The AI landscape in the UAE is the largest among countries mapped in this report, both in terms of number of entities engaging in AI and cross-ecosystem investment in the field.

Government

The UAE is adopting an aggressive strategy towards being a global leader in AI. To achieve this, the country established a Ministry of Artificial Intelligence - the first of its kind in the world - signaling the great priority AI holds for the UAE government.

Early on, the ministry launched the UAE National Program for Artificial Intelligence – BRAIN, a comprehensive and consolidated compilation of resources that highlight the national advances in AI. Mainly, the program will define and underline the various initiatives, collaborations, partnerships, and breakthroughs in the field.¹²¹ The

¹²⁰ Middle East: United Arab Emirates — The World Factbook
[<https://www.cia.gov/library/publications/the-world-factbook/geos/ae.html>]

¹²¹ World Leaders in AI by 2031

program also includes global conferences, summits, and events related to AI.

From a policy perspective, the UAE adopted the National AI Strategy 2031, which outlines an AI-centred digital transformation. In short, the strategy unveils that the UAE aims to become a fast adopter of emerging AI technologies across government services, as well as attract top AI talent to research and develop with new technologies.¹²²

On a city level, Dubai is hoping to become “the happiest city in the world” through the Smart Dubai government initiative. AI is one of the building blocks of Smart Dubai. For that reason, Dubai launched an Artificial Intelligence Lab, to expedite the process and integrate AI into government services and its smart city vision.¹²³

Education and research

The emirates aimed to be at the forefront of AI research and education regionally and internationally. As part of its national AI strategy, the country established the Mohamed Bin Zayed University of AI (MBZUAI) which plans to launch its first term in September 2020.¹²⁴ The University offers an MSc and a PhD in Computer Vision and an MSc and PhD in Machine Learning. It plans to expand its academic offering to include an MSc and PhD in Natural Language Processing by 2021.¹²⁵

Founded in 2018, the Inception Institute of Artificial Intelligence (IIAI) is an AI research institute headquartered in Abu Dhabi.¹²⁶ Partners with MBZUAI, the institute plans to supervise its PhD students and participate in curriculum development. Its

[<https://ai.gov.ae/about-us/>]

¹²² UAE Artificial Intelligent Strategy – 2031 استراتيجية الإمارات للذكاء الاصطناعي | UAE Artificial Intelligence Strategy 2031

[<http://www.uaesai.ae/en/>]

¹²³ Artificial Intelligence Dubai | AI Lab

[<https://www.smartdubai.ae/initiatives/ai-lab>]

¹²⁴ Mohamed bin Zayed University of Artificial Intelligence | MBZUAI

[<https://mbzuai.ac.ae/>]

¹²⁵ Program Listing – Mohamed bin Zayed University of Artificial Intelligence

[<https://mbzuai.ac.ae/study#programlisting>]

¹²⁶ Inception Institute of Artificial Intelligence

[www.inceptioniai.org/]

research focuses are: deep learning, reinforcement learning, computer vision, natural language processing with applied research on video understanding, medical imaging, and healthcare.¹²⁷

The Department of Health (DoH) of the UAE has also invested focus on AI innovations in the health sector, establishing a research and development laboratory aptly called the AI Lab.¹²⁸ The Lab is currently working on two projects: a wellness mobile application that acts like a health coach¹²⁹, and a chatbot to support with user queries on the DoH website.

Aside from the above-mentioned entities centred around AI research, many other interdisciplinary universities located in the UAE offer courses and conduct research in the field. As part of its AI mandate, the country is moving towards making AI education a standard in all school and higher education curriculum.^{130 131} For instance, Heriot Watt university is offering an accredited MSc in Artificial Intelligence.¹³² UAEU is also offering a minor of AI for its students.¹³³ Similarly, AUS launched a certificate of AI for smart cities, mainly targeting professionals and executives.¹³⁴

Civil society

The Arab Science and Technology Foundation's Virtual Hub initiative hosts some AI-related projects, but there is no indication of these projects' ongoing activity and

¹²⁷ Inception Institute of Artificial Intelligence – Our Research Focus

[<https://www.inceptioniai.org/research>]

¹²⁸ The AI Lab

[<https://www.doh.gov.ae/en/ailab>]

¹²⁹ My Health Coach

[<https://www.doh.gov.ae/ailab/projects/my-health-coach>]

¹³⁰ WAM Report: UAE leading the way in AI education

[<https://wam.ae/en/details/1395302795210>]

¹³¹ Dubai's schools are embracing Artificial Intelligence (AI)

[<https://www.visitdubai.com/en/business-in-dubai/why-dubai/news-and-insights/dubai-schools-embracing-artificial-intelligence>]

¹³² Artificial Intelligence – Heriot-Watt University

[<https://www.hw.ac.uk/dubai/study/postgraduate/artificial-intelligence.htm>]

¹³³ UAEU Course Catalog

[https://uaeu.ac.ae/en/catalog/undergraduate/programs/program_22118.shtml]

¹³⁴ American University of Sharjah launches Certificate in Artificial Intelligence for Smart Cities

[<https://www.aus.edu/media/news/american-university-of-sharjah-launches-certificate-in-artificial-intelligence-for-smart>]

state.¹³⁵

Industry

There are many companies in UAE that claim to use AI in their marketing material. Of course, it is difficult to validate these claims, so they are taken at face value and mapped only if they meet our criteria. This phenomenon is not unique to UAE, but is most noticeable in this tech hub. Also, some goals of companies planning to leverage AI may be far-fetched, raising questions about long-term value. According to Microsoft's AI maturity study: "while the hype of artificial intelligence (AI) and its potential role as a driver of transformational change to businesses and industries is pervasive, there are limited insights into what companies are actually doing to reap its benefits."¹³⁶

Legitimacy concerns aside, UAE companies working in AI are by far the most pervasive and well-funded in the MENA region. Mapped companies span a wide variety of industries and sectors. If a significant percentage of these companies succeeded, the size of the UAE AI for-profit ecosystem will be considerable on a global level.

Funding

The number of investors based in UAE and the dollar investment value significantly exceed other markets in the MENA region. According to Deloitte, the UAE attracted 62% of MENA investment activity by value in 2016.¹³⁷ So, as expected, the mapped industry, education and research ecosystems have access to an abundance of funding opportunities. In addition, many of the investors who work regionally or internationally are based or have offices in Dubai, making access to that type of funding easier.

¹³⁵ Arab Science and Technology Foundation's Virtual Hub Initiative
[<http://vi.astf.net/index.php/en/ss-home>]

¹³⁶ AI Maturity study
[https://info.microsoft.com/ME-DIGTRNS-CNTNT-FY19-05May-27-ArtificialIntelligenceinUnitedArabEmirates-SRGCM1068_01Registration-ForminBody.html]

¹³⁷ Private Equity and Venture Capital in the MENA Region 2016 report
[<https://www2.deloitte.com/iq/en/pages/finance/articles/private-equity-venture-capital-mena-region-2016-report.html>]

Entity	Ecosystem	Description
Inception Institute of AI	Education and research	A research institute that aims at driving excellence and leadership of AI research in the UAE and the wider world to promote economic growth, foster innovation and improve healthcare and people's lives.
Mohamed bin Zayed University of AI	Education and research	A special university that strives to establish and evolve interdisciplinary, collaborative research and development capability in AI, while educating students to be innovators and leaders with the knowledge to grow technology and enterprise in the UAE and globally.
Heriot Watt university	Education and research	Offering a MSc in AI, HWU hopes to give students the understanding and skills to develop intelligent software applications, such as those involving evolutionary computation and learning.
United Arab Emirates University	Education and research	Within its minor of AI, UAEU's students will learn how to improve the UAE government agencies and industry performance with these exponentially improving new technologies.
American University of Sharjah	Education and research	Offering a certificate of AI for smart cities, AUS serves mid- to high-level executives from across the Middle East tasked with developing Smart City solutions, equipping them with the needed knowledge and skills.
AIISI/Khalifa University	Education and research	A multidisciplinary research unit in Khalifa University, focused primarily on robotics, artificial intelligence, data science, next-gen networks, semiconductor technologies and cybersecurity
Machine Learning & Arabic Language Processing Research Group/Sharjah University	Education and research	A research group that engages in interdisciplinary collaborative research projects with external entities that share the same concerns about Arabic computing.
Turn8	Funding	A growth accelerator offers several rounds per year focused on startups with minimum viable product innovations (MVPs) and immediate

		product-to-market fit in the MENA region.
Khalifa Fund	Funding	The fund provides capacity building and funding in Abu Dhabi and other UAE regions, for UAE nationals.
BECO Capital	Funding	An early stage venture capital firm in the UAE
AI Venture Labs	Funding	An accelerator with a special focus on AI and cloud based startups to transform industries vertical-by-vertical.
Dubai Angel Investors	Funding	A micro-VC incorporated as an investment company and made up of like-minded individuals, interested in seed and Series A rounds of early-stage and growth technology companies.
Dtec Ventures	Funding	A VC firm that invests in early-stage technology companies in the MENA region with a nucleus to Dubai.
GINCO Investments VC	Funding	A direct investment fund, focusing on Seed through Series B investments in software technology companies.
GlowFish Capital	Funding	A fund that invests in seed and growth stages of disrupting startups.
Vuja De Capital	Funding	A venture capital firm that seeks to invest in companies operating in the cryptocurrency, artificial intelligence, blockchain and online sectors.
Falcon Network	Funding	A global network of angels that partners with incubators to select and invest in startups.
Smart Dubai	Government	A government office whose goal is to spearhead Dubai's "smart" transformation and make Dubai the happiest city in the world.
The Ministry of Artificial Intelligence	Government	The ministry responsible for enhancing the government performance by investing the latest technologies and tools of artificial intelligence and applying them in various sectors.
The List	Industry	Luxury fashion e-commerce product that

		connects people to the right products via artificial intelligence.
Wrappup (Acquired)	Industry	A meeting-based productivity app with intelligent voice recording that helps inside sales managers make better decisions.
Searchie	Industry	A talent acquisition platform that provides employers with suitable employee candidates using artificial intelligence & manual screening.
Fero.Ai	Industry	A platform that aims to automate, unify, and facilitate freight transactions globally.
AlgoDriven	Industry	AlgoDriven helps dealers and finance/insurance companies to accurately identify and price used cars using AI.
Accubits	Industry	A full-service software provider offering product development and digital transformation services to governments, tech startups, and other businesses, with specialization in AI solutions.
Derg	Industry	A predictive platform that helps to eliminate crashes, save lives, and create safer and smarter roads using AI.
CrowdAnalyzer	Industry	A set of tools for brands, SMEs, and individuals to search, monitor, analyze, and monitor social media powered by AI (NLP).
IQ Data	Industry	A data management platform that provides a comprehensive understanding of relationships between people and places using AI.
Seez	Industry	A mobile app that offers an AI-powered search engine for online car listings for car shoppers.
Votek	Industry	Votek is a software company specialized in developing high-tech solutions based on automatic Arabic speech recognition.
JetClass	Industry	A platform enabling passengers to book seats on private jets for prices competing with business class tickets, leveraging AI for recommendations.

Training Calendar	Industry	A platform for skill development and career progression powered by artificial intelligence.
Group 42	Industry	A company providing development and deployment holistic and scalable AI solutions.
BulkWhiz	Industry	An online bulk grocery shopping in UAE, powered by AI for recommendations.
Up Your Game	Industry	A realtime employee performance assessment solution based on sentiment analysis.
Modistabox	Industry	A fashion social e-commerce platform offering a personal styling service to customers, using AI for recommendations.
AI Trader	Industry	An AI-powered app capable of reviewing and making trading decisions autonomously based on real-time market information.
Prognica Labs	Industry	A smart screening solution for early detection of breast cancer using artificial intelligence and machine learning.
Virtual i Technologies	Industry	A risk engineering and data analytics firm that help the insurance companies to assess risks using AI.
Zettaflow	Industry	A comprehensive Data Analytics Environment to give useful insights.
Safe Driving Network	Industry	Safe Driving Network detects the driver's behavior in real-time to prevent collisions, evaluate and coach the drivers.
OneFactor	Industry	An AI Service Delivery Platform that helps data owners to launch AI-based services as a new revenue stream.
REIDIN.com	Industry	A platform that provides insights about real estate in developing economies.
Play.ht	Industry	An AI-based tool to create a realistic voice-over audio using plain text.
Lableb	Industry	An AI-based search engine that deals with the nature of Arabic content online to produce helpful

		results for users.
Pacific Controls	Industry	A development company that helps entities to help fully leverage smart connected devices, machines, employing AI for best results.
WhizKey	Industry	An AI development company that builds on-premise and highly customized AI-based products with data privacy at the core.
Distichain	Industry	A global inventory trade platform on credit without the need for trust by third parties, using Blockchain and AI.
Audace Labs	Industry	A product that offers effective AI solutions to help our client's business be agile & smart.
Saal	Industry	A company that provides businesses with solutions for challenging real-life problems, leveraging the power of AI.
Stalion.ai	Industry	A group of AI and business experts that work to revolutionize the future of enterprises in public and private sectors with AI and machine learning technologies.

Yemen

Government AI Readiness Rank	152 out of 194
GDP (PPP) per Capita	\$2,380
Human Development Index	177th
Population	28,498,683

Due to geopolitical factors, Yemen scores lowest in both GDP per capita and Human Development Index measures in the region mapped in this report.^{138 139} The ongoing war in the country has made it extremely challenging for businesses to set up shop and sustain operations. Hence, no entities are found to be working on AI in Yemen.

¹³⁸ Middle East: Yemen — The World Factbook
[<https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html>]

¹³⁹ Human Development Reports | United Nations Development Programme
[<http://www.hdr.undp.org/>]

Appendices

Appendix I: Resource banks

To support our research of identifying entities, we mined through existing datasets relevant to our research such as:

- [World Economic Forum – Meet the 100 Arab start-ups shaping the Fourth Industrial Revolution](#)
- [Flat6Labs Companies](#)
- [Crunchbase](#)
- [Wamda Capital Portfolio](#)
- [Knowledge for All – Emerging economies Artificial Intelligence ecosystem directory](#)
- [Birzeit University – Mapping the Data Economy Landscape in the Middle East and North Africa](#)

Appendix II: Regional Funding Organizations

Entity Name	Entity Type	Description	Target Countries
Wamda Capital	Seed/Growth Investment		MENA
Flat6Labs	Seed Investment		MENA
Dash Ventures	VC Firm	Amman-based Venture Capital firm that mainly invests in Tech-related companies in the MENA region.	MENA
AfricInvest	Seed/Growth Investment	An investment and financial services company based in Tunisia.	Africa

Faith Capital	VC Firm	A venture capital firm investing in talented founders building long-term value.	MENA/ with focus on GCC
Kisp Ventures	VC Firm	A venture capital firm based in Kuwait. It invest in early stage technology companies in the MENA region	MENA
NumuCapital	VC Firm	A seed fund that invests in promising MENA tech startups	MENA
ArzanVC	VC Firm	A venture capital fund that invests in innovative startups globally.	Global, with focus on MENA
Shorooq	VC Firm	A seed stage venture capital fund in the region, mainly investing in tech startups.	Global, with focus on GCC and MENA.
Global VC	VC Firm	A growth-focused venture capital firm, focused on enterprise technology investments.	MENA
Iliad Partners	VC Firm	A Venture Capital firm based in Dubai that invests in early stage technology companies with a focus on the MENA region.	MENA
B&Y Venture Partners	VC Firm	A Venture Capital firm based in Beirut that invests in early-stage technology startups.	MENA

Leap Ventures	VC Firm	A tech-focused entrepreneur-led venture capital firm that operates in MENA and Europe.	MENA and Europe
Saned Partners	VC Firm	A Venture Capital fund, aiming to nurture MENA early-stage startups into growth and profitability.	MENA
Outlierz	VC Firm	A venture capital that funds technology B2B companies to transform traditional industries in Africa.	Africa

Appendix III: Detailed Inclusion Criteria

Companies Inclusion Criteria

Companies included have to satisfy the following conditions:

- Active - Media outlets indicate ongoing operations.
- Clear Objective – The company objective is clear and specific.
- Specific AI Usage - The way or application that uses AI is not ambiguous after review of description and business model.
- Founded in Target Country – There is evidence that the company started in the target country even if main operations or official registration moved elsewhere later.

Funding Entities Inclusion Criteria

Funding entities included have to satisfy the following conditions:

- Active - Media outlets indicate ongoing operations.
- Mandate include AI – According to its mandate, the funding entity is likely to invest in or offer grants for AI-focused products, companies or research efforts.

- Mandate covers Target Country– The funding entity provides funding in the target country.

Education/Research Entities Inclusion Criteria

Education/Research entities included have to satisfy the following conditions:

- Specialization in AI – Education/Research entity either offers programs, concentrations or majors in AI or has at least one AI-dedicated research team.
- Active – There is evidence of continuity in AI related efforts.

Civil Society Entities Inclusion Criteria

Education/Research entities included have to satisfy the following conditions:

- Specialization in AI – Civil Society entities or social communities who do AI-related efforts (events, trainings, discussions, articles..etc) on a regular basis(not just an outlier event).
- Active – Media outlets indicate ongoing operations.

Government Entities Inclusion Criteria

Government entities included have to satisfy the following conditions:

- Explicit Relevance to AI – The government entity should either be dedicated for AI policy/development or has taken initiative for a regional or nation-wide effort concerning AI.