



مؤسسة قطر  
Qatar Foundation

لإطلاق قدرات الإنسان  
Unlocking human potential



# Artificial Intelligence at Qatar Foundation

June 2022

# 01

## Overview

Across the fields of IT, education, environment and healthcare, Qatar Foundation's focus on innovative research is injecting new technologies into the global marketplace, while identifying new challenges and opportunities. The research environment that Qatar Foundation (QF) has created, and expanded, over the past decade-and-a-half, with the aim of supporting Qatar's vision for human, social, and economic development, is unique – it encompasses the entire value chain of education, research and development, innovation, commercialization, and entrepreneurship.

QF views its investment in research and development as vital for Qatar's transition from a hydrocarbon economy to one where the production of services and goods is based on intellectual capital. Along with Qatar Science & Technology Park (QSTP), Industry Development and Knowledge Transfer (IDKT) office, the research institutes within QF's universities, Qatar Biobank, and the Qatar Genome Programme, QF's research efforts also includes innovation strategies as well as activities of entities within QF.

# 02

## Artificial Intelligence at QF



In Qatar, we are uniquely positioned to make the most of what AI has to offer. Our population is highly tech-savvy and our state-of-the-art research ecosystem with its unique multiversity model means lots of fascinating collaborations between world-class universities and research centers, contributing to the advancing societies and improving the quality of human life. One such example is that of the National AI Strategy that was developed by our computing research institute, and has been implemented by the Ministry of Transport and Communications at a national level.

Our efforts in delivering on AI goals are undertaken through conducting research that advances AI development; incubating and supporting new startups based on AI technology; supporting a governance and policy framework to effectively deploy AI; training the workforce for an AI future; developing AI technologies in areas such as healthcare and food security; and engaging the global community through AI for social good.

Through its work in AI, QF aims to achieve:

- Economic growth through the emergence of new fields and industries.
- Social progress through efficient governance, effective management of resources, improved discourse, and better understanding.
- Environmental sustainability through the proper understanding of natural systems and impact.
- Protection and promotion of cultural heritage through initiatives such as Arabic-language translation.
- Enhancing healthcare through early detection, smarter diagnosis, and more tailored treatment decisions

Our approach to AI, and the projects we have undertaken in the field, is designed in a way that integrates our research into the social and economic development of our society. Our AI research areas include: Arabic language technologies, AI for social good, foundations of AI and applications, AI policy and education, digital health, cybersecurity.

“Qatar can lead by example and show the rest of the world how to seamlessly embrace an AI+X Future, where almost every activity of importance will be touched by AI.”

**Dr Ahmed K. Elmagarmid,**  
**Executive Director, QCRI**

# 03

Qatar  
Science &  
Technology  
Park (QSTP)



The following QF entities are leading our work in the field of AI: QSTP is Qatar’s premier hub for applied research, technology innovation, incubation, and entrepreneurship. QSTP fosters a vibrant ecosystem that facilitates the development of new high-tech products and services, supports the commercialization of market-ready technologies, and offers state-of-the-art offices and facilities specifically designed for tech-based companies.

Operating across four overarching themes – Energy, Environment, Health Services, and Information & Communication Technologies – QSTP’s programs and services are designed to support Qatar’s drive toward sustainable economic development and diversification.

QSTP also provides two forms of funding to startups and entrepreneurs:

- **QSTP Product Development Fund (PDF):** Funding SMEs and Startups that develop products and services relevant to local market needs.
- **QSTP Tech Venture Fund (TVF):** A strategic venture capital fund designed to support local innovative startups and attract international startups looking to scale in the region.

Through these funds, QSTP was able to assist with the following AI-oriented startups:

- **Rayyan Systems Inc. (TVF Awardee):** Rayyan Systems Inc. is charting a path towards integrated collaboration for researchers across the globe. The web/mobile application helps systematic review authors screen citations in a quick, easy, and enjoyable fashion.
- **Rimads QSTP-LLC:** Rimads is a technology company striving to change lives across the globe through an innovative healthcare solution named Avey. Behind Avey is a brain that consists of a proprietary AI algorithm that taps into a sophisticated and continuously evolving memory of medical concepts. Using the most accurate AI medical algorithm in the world, Avey is working to ensure the accessibility of healthcare for everyone. Therefore, we developed a technology to be adopted in ways that are inclusive and equitable.
- **Tarantula AI (TVF Awardee):** Augmented and mixed reality technologies are widely reported to be on the brink of mass adoption, and tech startup Tarantula AI is creating solutions to narrow the gap between physical and virtual worlds, transforming the broadcast media industry. Tarantula AI's mission was to build the most accurate solution in the world for video broadcast production and to set the bar for the quality of this technology. This is, in large part, due to the company employing AI and deep learning to solve the classic problem of occlusion: the ability to manipulate areas in a 2D video that are blocked by another object.
- **Kanari AI (TVF Awardee):** Kanari AI offers the leading automatic speech recognition and text to speech solutions for Modern Standard Arabic and Dialectal Arabic.
- **EMMA Systems (PDF & TVF Awardee):** AI-powered Airport Management Systems provider, works with aviation stakeholders to increase the efficiency and sustainability of their operations by optimizing aircraft turnaround processes and by reducing delays and fuel wastage.
- **STA QSTP – LLC's Cyber Intelligence & Incident Coordination Centre:** The project is part of the collaboration between STA and Senseta during the course of the Product Development Fund Project. The aim is to enable governments and organizations increase effectiveness and timeliness of decision-making and preventative measures to social engineering-based cyber threats through ingestion of large, diverse and heterogeneous data sets in near real time. The project included use of geographical context of events to enable advanced analysis and application of mathematical and machine learning models to expose unexpected patterns, anomalies and threats that were undetectable with traditional technologies. The advanced analysis was coupled with innovative visualization tools to discover previously hidden patterns and anomalies.
- **Droobi (PDF Awardee):** Droobi is a bilingual digital health therapeutics solution for preventing and controlling chronic illnesses widespread in the MENA region. It has a focus on diseases that rely primarily on behavioral changes, such as diabetes and obesity.

# 04

ADGS (PDF  
Awardee):

ADGS developed TASMO with the support QSTP. TASMO is an unstructured search, semantic extraction, and machine learning framework that turns non-integrated sources of information into a unified data corpus, simplifying the tasks of information seeking and retrieval and automatically constructing models and prediction schemes on top.

# 05

Qatar Robotic  
Surgery  
Center (QRSC)

QRSC is a training and technology development facility for state-of-the-art surgical technologies. A QSTP initiative in collaboration with Hamad Medical Corporation – the national public healthcare provider in the State of Qatar – the center is fully equipped with high-end equipment and medical simulation devices to run a complete range of surgical simulation training for minimally invasive and robotic assisted surgeries as well as surgical related training programs.

# 06

Qatar  
Computing  
Research  
Institute (QCRI)

QCRI supports QF's mission by helping to build Qatar's innovation, technology and artificial intelligence capacity. It is focused on tackling large-scale computing challenges that address national priorities for growth and development.

In doing this, QCRI conducts world-class multidisciplinary computing research that is relevant to the needs of Qatar, the wider Arab region and the world. The institution performs cutting-edge research in such areas as Arabic language technologies, social computing, data analytics, and cyber security.

Examples of QCRI's initiatives:

- **2022:** SAQR – an artificial intelligence (AI)-based social media analytics platform developed in agreement with Qatar-based deep technology innovator, ADGS Computer Systems. SAQR is a platform that supports businesses, government entities, researchers, and non-profit organizations in collecting, analyzing, and monitoring social media activity on a large scale. It can not only display high-level statistics about topics of interest, but also uses advanced AI to help users discover trends and understand the demographic breakdown of relevant messages and users.
- **2020:** QATS/Kanari: QCRI's Advanced Transcription System (QATS) automatically converts speech to text using state-of-art speech-recognition techniques. QATS provides the ability to transcribe Arabic and translate into English, and vice versa. The speech transcription has been used by Aljazeera.net for automatic generation of subtitles in video segments, and discussions are underway with other potential users. QATS speech recognition system has achieved an accuracy rate of 93 percent for broadcast news reports and more than 70 percent for broadcast conversations.

- **2020:** Arabic NLP toolkit: QCRI Principal Scientist, Dr. Kareem Darwish, is currently developing a state-of-the-art Arabic NLP toolkit that includes POS tagging, named entity recognition, parsing, etc. In social computing, he is working on the automated detection of propaganda accounts on social media and on stance detection.
- **2019:** Tanbih (meaning alert or precaution in Arabic) – developed in collaboration with MIT- is an online portal designed to analyze and uncover fake news at its very origin. The technology uses artificial neural-networks to represent text in a multi-dimensional space. Through a complex series of computations, it can identify disinformative content and pinpoint its bias.
- **2018:** Boeing partnered with QCRI for Annual Symposium: QCRI partnered with The Boeing Company to host the fifth annual Machine Learning and Data Analytics Symposium (MLDAS). Experts discussed their latest research in fields as diverse as data mining, signal processing, human-centric machine learning, acoustics and facial recognition technology.
- **2016:** Artificial Intelligence for Disaster Relief (AIDR) is a system that aggregates and analyzes tweets and text messages related to disasters on a large scale, enabling individuals from humanitarian relief organizations, such as the International Red Crescent, to easily understand a situation in real-time.
- **2016:** QCRI's Advanced Transcription System (QATS) is an advanced Arabic speech processing technology, including speech-to-text and dialect detection using speech signal. Used by Aljazeera.net, it has achieved an accuracy rate of 93% for broadcast news reports and more than 70% for broadcast conversations.



# 07

About Qatar  
Foundation

Qatar Foundation (QF) is a non-profit organization made up of more than 50 entities focused on education, research, and community development.

QF's unique ecosystem – supported by partnerships with leading international institutions – is built on initiatives that address our most pressing challenges, create global opportunities, and empower people to shape our present and future.

# 08

About  
Education  
City

Education City, QF's flagship initiative, is a campus that spans more than 12 square kilometers and hosts branch campuses of some of the world's leading educational institutes, a homegrown university, research and innovation hubs, and community facilities. Together, this makes Education City a unique environment of knowledge – pioneering a new approach to multidisciplinary, global education and enabling breakthroughs that benefit Qatar and the rest of the world.

<https://www.hbku.edu.qa/en/news/fighting-disinformation>

<https://www.hbku.edu.qa/en/news/qcri-humanitarian-technology-becomes-first-middle-east-win-open-source-software-world-challenge>

<https://www.hbku.edu.qa/en/news/qcri-earns-arc-2018-best-innovation>

# 09

QF Media  
Center

The Qatar Foundation (QF) Media Center provides you with access to useful information. This includes a list of QF expert commentators, information about the QF Centers, media pack & factsheets, logos, photo gallery and finally, our stories & press releases. To find out more, please visit

[www.qf.org.qa/media-center](http://www.qf.org.qa/media-center)

**For more information and for media enquiries, please contact the QF Press Office at [pressoffice@qf.org.qa](mailto:pressoffice@qf.org.qa)**



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