

Maria Sahakyan

<https://linkedin.com/in/mariasahakyan>

Email : sahakyan.maria@outlook.com

Mobile : +971 (50) 267-30-47

EDUCATION

- **Khalifa University, MIT Collaborative Program** Abu Dhabi, UAE
PhD, Interdisciplinary Engineering, Computer Science major Sep. 2016 – Dec. 2020
Research field: Supporting data science via explainable artificial intelligence.
In this research, I have explored the possibility of using explainable AI techniques as a generic data analysis tool. I have developed a novel data science pipeline that improved traditional data analysis tools' performance providing additional insights into the data.
- **Masdar Institute, MIT Collaborative Program** Masdar City, UAE
Masters in Engineering Systems and Management Sep. 2014 – July. 2016
Research field: Concentrated Solar Power (CSP) technologies and their deployment perspective in the UAE.
In this research, I have identified the lowest-cost and most environmentally-friendly energy mix for the UAE by using statistical and optimization models simulated in the Long-range Energy Alternatives Planning (LEAP) system.
- **Yerevan State University** Yerevan, Armenia
Bachelor's in Actuarial and Financial Mathematics Sep. 2008 – May 2012
Research field: As a final project, I've explored the possibility of using a Probable Maximum Loss risk calculation technique from actuarial science to assess customer's credit portfolio risk in commercial banks via restructuring their reserves.

EXPERIENCE

- **New York University Abu Dhabi** Abu Dhabi, UAE
Postdoctoral Associate, Computational Social Science Feb. 2022 - Present
My everyday tasks includes mining, pre-processing, manipulation, and visualization of data, training machine learning models (both for regression and classification tasks), hyperparameter tuning for the models being trained, clustering, implementation of Explainable AI techniques, etc. One of the projects I am working on is focused on ethnic diversity across companies and countries.
- **New York University Abu Dhabi** Abu Dhabi, UAE
Postdoctoral Associate, Department of Computer Science, Center for Cyber Security March 2021 - Aug. 2021
My everyday tasks included mining, pre-processing, manipulation, and visualization of data, training machine learning models (both for regression and classification tasks), hyperparameter tuning for the models being trained, clustering, implementation of Explainable AI techniques, etc. One of the projects I was working on was focused on privacy preservation, in particular, hiding sensitive user information of a popular dating website, that could be exposed using facial recognition technology.
- **Masdar Institute** Masdar City, UAE
Research Assistant Sep. 2014 - Jul. 2016
The role of research assistant was to assist the professor in solving various research problems as well as work on research projects. I did research in order to find the lowest cost and environmentally friendly energy mix for the UAE by 2030. The research scope included economic, risk, and efficiency analysis of Concentrated Solar Power, Solar Photovoltaic technologies, competition with the currently used energy sources, and their future deployment in the UAE.
- **Ernst and Young** Abu Dhabi, UAE
Research Intern, Sustainable Audit Dec. 2015 - Jan. 2016
I researched and analyzed the impact of The 21st United Nations Climate Change Conference and Intended Nationally Determined Contributions submitted by GCC countries on their economies, businesses and governments.

- BROgrammers LLC** USA, Delaware
Statistical analyst/consultant *May 2015 - Nov. 2016*
 Analyzed demography and behavior of the registered users using statistical methods and data science tools. Provided insights that helped to optimize advertisement campaigns, specifically to better target identified trendy demographics. Provided insights significantly reduced advertisement costs.
- Masdar Institute** Abu Dhabi, UAE
Teaching assistant *Sep. 2015 - May 2017*
 Assisted professors of Sustainable Energy and Systems Optimization courses. Organized tutorial sessions for students, assisted the professor with preparing course materials and assignments, helped with exam grading, guided students with their difficulties, and helped the professor create and complete documents necessary for a course official accreditation.
- Asha United LLC** Yerevan, Armenia
Supply Chain Specialist *Oct. 2013 - Sep. 2014*
 I was responsible for price negotiations and communication with all the clients (shippers, agents, airlines, etc.). My daily duty included processing all the required documents, shipment location tracking, and consulting clients on insurance and tariffs matters. I kept in touch with contractor companies, following the inventory levels and demand patterns, finding suppliers and negotiating prices, and ordering inventory based on the forecasts to meet the demand.
- Pepsi-Cola Bottler Jermuk International LLC** Yerevan, Armenia
Sales Analyst *May 2013 - Oct. 2014*
 Prepared reports regarding conditions in the market for the CEO, analyzed sales performance, and identified weak areas of the organization. Forecasted future sales of the company, made recommendations for improvements in sales techniques and promotional efforts.
- Pro Credit Bank** Yerevan, Armenia
Business Credit Analyst *Dec. 2012 - May 2013*
 With the credit committee made decisions on loan provision based on the gathered information about businesses' inventory, actives, collateral, total financial situation, and credit information. Reviewed loan applications, visited the business site, collected information, and monitored portfolios to avoid monthly loan payment delays.
- Pro Credit Bank** Yerevan, Armenia
Intern, Young Banker's Program *Jul. 2012 - Dec. 2012*
 Researched bank's customers, created surveys for the segmentation and targeting of potential customers. Investigated the local market for the existing similar products and identified the competition levels.

TECHNICAL SKILLS

Languages: Python, R, STATA, EViews, SQL, GAMS, LaTeX

Simulation software: Vensim PLE, ARENA, SIMIO, LEAP

Tools: Jupyter, Google Collab, pandas, dask, numpy, scipy, scikit-learn, matplotlib, seaborn, TensorFlow, statsmodels

Other: Adobe Illustrator, Autodesk Sketchbook, Microsoft Office tools

LANGUAGES

Armenian: native

Russian: fluent

English: fluent

Spanish: Elementary

HOBBIES AND VOLUNTEERING

I paint and do illustrations during my free time (<https://www.instagram.com/colourtale/>) as well as actively participate in stray animal rescue groups. Cycling and hiking are my outdoor activities of choice.

PUBLICATIONS

M. Sahakyan, Z. Aung, and T. Rahwan, “Explainable Artificial Intelligence for Tabular Data: A Survey,” IEEE Access, accepted for publication, 2021, DOI: 10.1109/ACCESS.2021.3116481

WORK IN PROGRESS

1. “Supporting data science via Explainable Artificial Intelligence (XAI) techniques”
2. “Hiding sensitive user information that can be exposed using facial recognition technology from profile photos of the users”