Samah Yeager

Data Scientist & Software Engineer

SUMMARY

I am a software engineer with cutting-edge R&D experience in complex systems modeling, multi-agent intelligent systems, and real-time data analysis. With a lifelong passion for mathematics, pure and applied, I am always searching for challenging new problems to solve.

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samahyeager (https://t.me/samahyeager)

Experience

Nov 2021 – Sep 2022

Full-time parenting at Career Break

SUMMARY

Took ten months off to care for my firstborn child and immigrate to the United States from Morocco.

Sep 2021 – Nov 2021

Data Scientist (Contract) at Hubpay (https://hubpay.ae/)

SUMMARY

Joined as one of the earliest members of Hubpay's data science team. As the first independently regulated FinTech in the UAE licensed to do cross-border and local payments, our work focused on applying data science to make remittances more inclusive in emerging markets.

- Developed customer segmentation generator in Python for personalized marketing to meet user growth targets.
- Translated business requirements from various departments into unified technical specifications, resulting in stronger user stories and user experience.
- Communicated key findings to non-technical teams using advanced Seaborn data visualization woven into strong business narratives and slides.

Sep 2019 – Aug 2021

Founder at Womanescence (https://womanescence.com/)

SUMMARY

Founded a FashionTech startup built to deliver truly custom-made, perfect-fit clothing to fashion enthusiasts on any device, anywhere—your dream garment designed in under a minute. Recruited team, raised seed capital, and built MVP.

- Created two-fold recommendation system: in-house designed AI algorithm that progressively learns each user's fashion taste by garment; and a stylist-driven personalized recommendation system for each garment's individual features.
- Designed and created a data-driven collection of 3D garments, developed plugin that has generated proof-of-concept 3D collections of over 170,000 possible garments.
- Shipped MVP apps for desktop and mobile.

Languages

English :	★★★
French :	★★★
Spanish :	★★☆
Arabic :	★★★

Feb 2019 – Jul 2019

Graduate R&D Intern at Information & Communication Technologies Lab, International University of Rabat (https://www.uir.ac.ma/en/)

SUMMARY

Conducted quantitative, data-driven analysis of the influence of emotions on driving behavior in various traffic conditions for development of an Advanced Driver-Assistance Systems (ADAS).

- Trained and tested two CNN models on facial expression recognition and heart rate variability mapping, and completed the analysis with a real-time driving behaviour scoring.
- Automatically detected drivers' emotions in real-time to prevent risky and aggressive behaviour and assist safe driving.

May 2018 – Nov 2018

Graduating R&D Intern at RATP Group (https://www.ratp.fr/en/groupe-ratp)

SUMMARY

Designed multi-agent deep reinforcement learning system for demand-dependant traffic management and real-time regulation on an automatic metro line. Developed a railway traffic management algorithm that operates on two levels: the *a priori* optimal management of supply based on daily estimation of the demand; and the optimal regulation in real-time of rail traffic according to live information using multi-agent deep reinforcement learning.

- Introduced first AI solution for driverless train control to company's traffic control department.
- Implemented a selective, agent-specific control system which produced a 450% improvement in demand satisfaction.

Jul 2017 – Sep 2017

R&D Intern at Yazaki Group (https://www.yazaki-group.com/global/)

SUMMARY

Helped Continuous Improvement team shift from a manual, spreadsheet-based approach to an automated and optimized scheduling solution for the manufacturing order of automotive parts.

- Developed an original mathematical model for a machinery tools minimization problem, then solved the mathematical problem with a multi-agent reinforcement learning algorithm.
- Found optimal equipment setup for a standard order, making manufacturing of the batch 17% faster with 21% less manual interventions.

Jul 2016 – Aug 2016

Intern at APM Terminals (https://www.apmterminals.com/)

SUMMARY

Designed and developed an Access Control Management API for the Tangier operation of a multinational shipping service network using Oracle Database.

Volunteer

Dec 2015 – Mar 2018

Founder at Club Vintage at ENSIAS (https://www.facebook.com/ClubVintageENSIAS/)

SUMMARY

The club's ongoing mission is to nurture computer science students' appreciation for computer technology by looking back at how it began and all the giant steps, failures and successes it took to become what it is today. We organized webinars, keynotes, and salons to widen eyes and minds in awe of the journey of tech's evolution.

Skills

Applied Mathematics :

Operations Research | Mathematical Modeling

Linear Programming

Frequentist and Bayesian Statistics

Predictive Systems

Deterministic and Stochastic Optimization

Metaheuristics | Graph Theory

Control Theory | Systems Theory | Simulation

Formal Methods

Data Science :

Supervised Learning | Unsupervised Learning

Reinforcement Learning | Data Analytics

Data Visualization

Languages & Tools :

Python | R | Matlab | CPLEX | C, C#, C++

SQL, PL/SQL, NoSQL

Industry-Specific :

Transportation Systems

Logistics and Operations | Ecommerce

User Experience :

User Research | Feature Definition | Ideation

Wireframing | Prototyping

Education 🏛

Sep 2012 – Aug 2015
Preparatory classes in maths, physics, and engineering sciences in **Mathematics & Physics** from **Ibn Ghazi** with **MP* advanced placement**

Sep 2015 – Aug 2018
Masters of Engineering in **Computer Science** from **High National School for Computer Science and Systems Analysis (ENSIAS)** with **Magna Cum Laude**

- Developed gravitational research algorithm for airline crew scheduling in Python.
- Designed and developed hybridization of genetic algorithm and simulated annealing algorithm for optimization of continuous casting scheduling problem in Matlab.
- Conducted time series prediction using variants of DNN and SVR algorithms in Python.
- Design and Development of a binary Branch & Bound API in Python.
- Solved numerous Quadratic Programming and Mixed Integer Programming supply chain problems using CPLEX.
- Developed business intelligence dashboards driven by multi-modal data mining in QlikView.

Sep 2017 – Mar 2018
Professional Certificate in **Machine Learning** from **Standford University, School of Engineering** with **Completion**

References 99

> Samah has demonstrated a remarkable dedication to the projects she has undertaken and a passion for optimization and artificial intelligence. In these areas, she has carried out projects which quality testifies to her rigor, her autonomy and her capability to solve complex problems and to produce high quality data science work.
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> *— Pr. Raddouane Chiheb, Professor of Artificial Intelligence, ENSIASA*