



MOHAMMAD SHAKER

Holder of Exceptional Talent Visa - Tier 1

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BACKGROUND

Holder of Exceptional Talent Visa - Tier 1. I drew a lot in my childhood and programmed a lot in my adulthood. I always love a challenge. I started in Academia and published 10 research papers in the domain of machine learning and creativity tools (Nominated for the best paper award 4 times while still an undergrad.)

I didn't like doing just research. I wanted something tangible. During the last 6 years, I worked mainly in startups. I built stacks and teams in startups in the Netherlands and the UK in EdTech and HealthTech, with small teams of 1-3. I later built my own startup in EdTech, Alphazed: the first AI-led, language-agnostic platform for transforming any curriculum into its gamified digital twin, end-to-end, leading a team of 12.

My favorite writers are Seneca and Nassim Taleb, and therefore, I very much detest imposters.

EDUCATION

- **MSc. in Human-Computer Interaction and Ubiquitous Computing** 2014-2015
Joseph Fourier University, Grenoble, France.
- **BEng. (with Honors) in Information Technology Engineering and Artificial Intelligence** 2008-2013
Faculty of Information Technology Engineering, University of Damascus, Syria.
- **[Coursera] Specialization in Graphic Design** 2019
100% across 5-Course Specialization. California Institute of the Arts, CalArts.

AWARDS & HONORS

- **Tier1-Exceptional Talent** 2018
Endorsed by TechCity UK as an Exceptional Talent and being rewarded with 5-year UK Visa for this.
- **Albasel Award for Academic Excellence** 2013, 2012, 2011
Awarded the most prestigious award for academic excellence three times in a row - Faculty of Information Technology Engineering, Damascus, Syria.

EXPERIENCE

- **Engineering Director at Noon: The Social Learning Platform**

Hired as a manager and promoted to a director after 4 months.

April 2022-
Now

As a manager, the N+ team became the most productive team at Noon within my first 2 months in the company.

As a director, engineering moved to agile/scrum with weekly sprints. Moved the engineering structure around multiple product verticals, XFN, cross functional working in squads instead of engineering silos.

Introduced and lead the implementation of TDD at Noon and i18n automation pipelines for frontend and backend.

Tech Stack:

Backend: Java, Typescript, nGraph, TigerDB.

Frontend: Android native, iOS native.

Team: 26 engineers, 3 analysis, 3 designers.

- **Founder and CTO of Alphazed: Gamified Learning Experiences for Kids**

Alphazed is the first AI-led, language-agnostic platform for transforming any curriculum into its gamified digital twin, end-to-end. Reached 95,000+ students in the first 13 months with a 0 marketing budget.

May 2020-
March 2022

Tech Stack:

Backend: Python, Flask, AWS, Lambda, SQLAlchemy, Serverless (sls), CircleCI (CI/CD).

Frontend: Flutter, Dart, CodeMagic (CI/CD)

Analysis and Marketing: Segment, Amplitude, Drip for marketing automation.

Team:

Hired, built and lead a team of 12 members: 7 engineers, 2 marketing, 2 business, 1 content.

- **Software Engineering Lead - Neurofenix**

3 year post. Employee #5. I worked on Neuroball: a hardware controller used by stroke survivors to rehabilitate by playing video games. Built the whole tech infrastructure in the first year. Frontend and Backend. TDD, DevOps. Responsible for the software platform, end to end. Building the software and user tracking architecture of Neurofenix. Building the backend backbone, the API and the deployment infrastructure.

May 2018-
May 2021

Tech Stack:

Backend: AWS, Lambda, Serverless(sls), Python (flask), DynamoDb, Docker, TDD and CI/CD with CircleCI, IaC with Serverless, Segment and Amplitude.

Frontend: Build the whole custom IoC framework on top of Unity3D. CI/CD with Unity Cloud Build (UCB.)

Team:

Hired, built and lead a team of 3 members: 1 backend, 1 frontend and 1 DevOps.

- **CTO of [almeta.io](http://www.almeta.io) Initiative for News Fact Checking in the Arabic Language** May 2019-
August 2021

Almeta is an AI initiative advancing the understanding of the Arabic language. We developed programmable APIs that can measure bias, neutrality, readability, informativity and other metrics for any Arabic text content on the web, tackling false news and fact-checking first.

Released as a web and mobile app as a News Platform having these metrics. We published our technical and research work in more than 100+ machine learning research and technical blogs in Natural Language Processing (NLP) for the Arabic language on our blog for the public. All in English for anyone to use and read: <https://www.almeta.io/en/blog/>

Tech Stack:
All as micro-services. Built on top of GCP Cloud Run, AWS Lambda with Serverless/Python/Flask, DynamoDB, ElasticSearch, Redis, Step Functions, Snorkel, Wikifier, TDD, Docker, IaC, CircleCI.

Team:
Hired, built, and lead a team of 7 members: 5 engineers, 1 marketing, 1 business.
- **Entrepreneur in Residence, Dubai Future Accelerator (DFA)** Q2 2018

2-month program. Working alongside the government to use machine learning techniques to solve problems in big companies. (AWS Lambda, AWS Dynamodb, Nodejs, Javascript.)
- **Software Engineer / Full Stack - Squla** Jul 2016-
May 2018

Developing an education platform for 2 million Dutch students to both learn and play. Working using Scrum in 2-week sprints. Responsible for cross-framework integration from backend to frontend and API design, features end-to-end. Co-worked on the first multiplayer game by Squla using WebSocket servers.

Tech Stack:
Backend: AWS, Python, EC2, TDD, Selenium tests, SQLAlchemy
Frontend: Javascript, jQuery, backbone.js, C# with Unity3D engine
- **Machine Learning Researcher - ITU of Copenhagen, Denmark** 2013-
2015

Worked in the Design Innovation Lab implementing novel ideas in machine learning in the domains of procedural content generation, emotions modeling and novel creativity tools. My work on [Ropossum](#) was featured in Game Developer Conference (GDC) and [Gamasutra](#). 10 research papers in main conferences have been published with 4 nominated for best paper award while I was an undergrad.
- **Development Specialist - Syriatel (the largest telecom Company in Syria)** Q1 2014

Migrated old services into a new configuration-over-implementation, xml-based, SaaS framework.
- **Instructor and Tutor** 2011-
2015

Teaching 25+ courses while I was an undergrad for more than 1500 learners in the domain of programming languages, mobile applications, computer graphics and game engines. All courses are available online on [slideshare](#).

PUBLICATIONS

Conferences

1. Noor Shaker, Mohammad Shaker and Mohamed Abou-Zleikha. [Towards Game-Independent Models of Player Experience](#), in Proceedings of Artificial Intelligence and Interactive Digital Entertainment (AIIDE 15), 2015. 2015

2. Noor Shaker, Mohamed Abu-Zleikha and Mohammad Shaker. **Active Learning for Player Modeling**, in Proceedings of the 10th International Conference on Foundations of Digital Games, 2015. 2015
3. Mohammad Shaker, Noor Shaker, Julian Togelius and Mohamed Abu-Zlekha. **A Progressive Approach to Content Generation**, in Proceedings of EvoGames: Applications of Evolutionary Computation, Lecture Notes on Computer Science, 2015. **Nominated for best paper award.** 2015
4. Walaa Baghdadi, Fawzyah Shams Aldeen, Rawan Al-Omari, Zeina Alhalwani, Mohammad Shaker and Noor Shaker. **A Procedural Method for Automatic Generation of Spelunky Levels**, in Proceedings of EvoGames: Applications of Evolutionary Computation, Lecture Notes on Computer Science, 2015. **Nominated for best paper award.** 2015
5. Mohammad Shaker, Noor Shaker, Mohamed Abu-Zlekha and Julian Togelius. **A Projection-Based Approach for Real-time Assessment and Playability Check for Physics-Based Games** in Proceedings of EvoGames: Applications of Evolutionary Computation, Lecture Notes on Computer Science, 2015. **Nominated for best paper award.** 2015
6. Noor Shaker and Mohammad Shaker. **Towards Understanding the Nonverbal Signatures of Engagement in Super Mario Bros**, in Proceedings of the 2014 Conference on User Modeling, Adaptation and Personalization (UMAP 2014), 2014. 2014
7. Mohammad Shaker, Noor Shaker and Julian Togelius. **Evolving Playable Content for Cut the Rope through a Simulation-Based Approach**, in Proceedings of Artificial Intelligence and Interactive Digital Entertainment (AIIDE 13), 2013. [Poster] 2013
8. Mohammad Shaker, Noor Shaker and Julian Togelius. **Ropossum: An Authoring Tool for Designing, Optimizing and Solving Cut the Rope Levels**, in Proceedings of Artificial Intelligence and Interactive Digital Entertainment (AIIDE 13), 2013. 2013
9. Mohammad Shaker, Mhd Hasan Sarhan, Ola Al Naameh, Noor Shaker and Julian Togelius. **Automatic Generation and Analysis of Physics-Based Puzzle Games**, in Proceedings of the 2013 IEEE Conference on Computational Intelligence and Games (CIG 2013), 2013. **Nominated for best paper award.** 2013
10. Noor Shaker, Mohammad Shaker, Ismaeel Abuabdallah, Mehdi Zonjy, and Mhd Hasan Sarhan. **A Quantitative Approach for Modeling and Personalizing Player Experience in First-Person Shooter Games**, in the Extended Proceedings of the 2013 Conference on User Modeling, Adaptation and Personalization (UMAP 2013), 2013. [Poster] 2013

SIDE PROJECTS

- **Botian: UX-based Chatbot**: Using MEAN stack working on the first Arabic Bot that can deliver a full understanding of the Arabic Language. The first version is a Bot to replace the customer service in the [Housing Establishment in Dubai](#). Take a look at a prototype [here](#). 2017
- **Games and Apps**: Released 4 Android games ([Thex](#), [Paper Ski](#), [Flopp](#) and [SyncSeven](#)), end-to-end, using *Selene*, a high-performant framework I built on top of the Unity3d game engine. *Selene* has its own Inversion of Control (IOC) framework with PubSub mechanism, making Unity development 10x faster. [Unity3d, Reflection, Publish/Sub, C#, Java, Matlab, AI, Facebook API, Twitter API, Google Play Services] 2015-2016
- **Ropossum Authoring Tool, Procedural Content Generation for 2D Physics based games**: Advancing the state-of-the-art, Ropossum is the first evolutionary-based authoring tool for the generation of playable content for physics-based games. 4 papers have been nominated for best paper award. [C#, Java] 2014
- **Personalizing Content Generation in First Person Shooter Games through Player Modeling**: Procedurally generating levels for First Person Shooter games using machine learning techniques (Neuro-evolution Preference Learning and Emotions Modeling.) [Cube Engine, C++, Java, Matlab] 2012

- **Radio Frequency IDentification (RFID) Real-time 3D Tracking System:** The system enables realtime monitoring of an organization using RFID tech, 3D mobile and web environments. The system was implemented in the University of Information Technology in Damascus, Syria. [C#, WCF, SQL Server, WPF-3D] 2011
- **[Lead] Immersive 3D Environment using Kinect and Voice Commands:** Enables the designer/gamer to design his/her own 3D world with gesture and voice commands. [Unity3d, C#, Kinect] 2014
- **[Lead] Weebee on a Mission:** is a serious game that can detect, track and change the child behavior. [Unity3d, C#] 2014

DEV TOOLS

Programming Languages	C#, Java, Python, C++, VB, Pascal
Backend	AWS, AWS Lambda, GCP, MySQL, SQLAlchemy, DynamoDB, Selenium, Test driven development (TDD), Pytest, WebSocket, CI/CD with Jenkins and CircleCI, EC2, Serverless (sis), Cognito, Infrastructure as a Code (IaC)
Mobile Development	Flutter (Android and iOS), Unity3D (Android and iOS)
Web Development	JavaScript, AngularJS, Bootstrap, HTML, CSS, Jinja
Engines and Graphics	Unity3D, OpenGL, XNA, WPF
AI and Machine Learning	LISP, Prolog, Matlab, Genetic Programming, Grammatical Evolution, [Deep] Neural Networks, NLP, Preference Learning, Neuro Evolution, Features Selection, Clustering
Others	Scrum, Agile, API design, RESTful Webservices, Jenkins, babel, MVC, MVVM, Inversion of Control (IoC), Reflection, Publish/Subscribe

LANGUAGES

Arabic	Native
English	Bilingual proficiency (TOEFL PBT: 590)
German	Limited working proficiency
French	Elementary proficiency

INTERESTS

Nassim Taleb • Seneca • Green Tea • Books • Design (Dieter Rams) • LEGO • Swimming • Languages • Nissan GT-R