

EXPERIENCE (CHRONOLOGICAL)

Full-time Machine Learning Engineer

Karaj, Iran

- *Applications of Data Science and Machine Learning in Tourism*
Nahal Gasht/Pana4

04/2022 - Present

- Developed and implemented a new data architecture that reduced bad data by 35%, resulting in increased accuracy of machine learning models.
- Designed and implemented a full pipeline of data extraction, transformation, and preprocessing dealing with low/unlabeled data regime.
- Created engaging and informative user interactions by integrating gamification objectives in designing and training machine learning models.
- Collaborated with employees, software engineers, and managers to revamp the data architecture and ensure smooth integration with existing systems.
- Utilized Python, PyTorch, SKlearn, Pandas, Snorkel, Docker, MLflow, Git, FastAPI, Godot, etc

Research Assistant

Saarbrücken, Germany

- *Artificial Intelligence aided Design and Manufacturing Group*
Max Planck Institute for Informatics

07/2020 - 03/2021

- Novel self-supervised neural method for obtaining the optimum design showcased in Topology Optimization
- Supervision of **Dr. Vahid Babaei**
- Collaboration of **Prof. Julian Panetta** at University of California, Davis, USA.
- Physics-based simulation of stiffness of the obtained design
- Generative continuous design via a single fixed mesh through controlling the frequencies
- This project has been published and presented in ACM Symposium on Computational Fabrication 2021
- This project was defined as my master's thesis
- I spent 1500+ hours until the submission of concluding paper

Award

- *Accepted in MSc program without Entrance Exam as an Exceptional Talent*

09/2019

Award

- *Tuition Waiver, MSc, Iran University of Science and Technology*

09/2019

Organizer and Mentor

- *Voluntary activity*
IUST Projects

12/2019 - 07/2021

- Attempted to challenge the university's siloed culture through open scientific/general discussions
- Mentored junior students in preparation for going through the M.Sc thesis process, from ideation to publishing

Master of Computer Engineering - Artificial Intelligence

Tehran, Iran

- *Iran University of Science and Technology (IUST)*

09/2019 - 12/2022

- IUST is one of the most prestigious universities of the country
- **Thesis:** High Resolution Neural Topology Optimization via Differentiable Physics Engine
- **Defense:** Defended with Full mark on 22 Oct 2022
- **GPA:** 17.17/20.00

Long Vacation

Iran

- *Travel*

08/2019 - 09/2019

Award

- *Ranked 3rd among BSc graduates in Computer Engineering, University of Guilan*

07/2019

- Mentor and Lecturer**

 - *Voluntary activity*
Rasht School of AI

 - Held lectures around applications of AI, particularly digital image processing (Slides)
 - Mentored a few students who were interested in artificial intelligence and its applications

12/2018 - Present
- Head Teaching Assistant**

 - *Advanced Programming*
University of Guilan

 - Supervision: Dr. Ghasem Mirroshandel
 - Taught undergraduate students Java programming language in weekly 4-hour sessions
 - Designed and graded their assignments and the final project

08/2018 - 02/2019
- Head Teaching Assistant**

 - *Algorithms Design*
University of Guilan

 - Supervision: Dr. Mojtaba Shakeri
 - Held weekly 2-hour QA sessions and graded the assignments

08/2018 - 02/2019
- Head Teaching Assistant**

 - *Computational Intelligence*
University of Guilan

 - Supervision: Dr. Mojtaba Shakeri
 - Designed programming assignments
 - Held weekly 2-hour QA sessions and graded all the assignments

02/2018 - 07/2018
- Internship**

 - *Matris Co*

 - Examination, troubleshooting, and repair of computers
 - Research and investigation in technical areas to optimize the repair process

Tehran, Iran
07/2018 - 09/2018
- No Activity**

07/2017 - 09/2017
- No Activity**

07/2016 - 09/2016
- Award**

 - *Tuition Waiver, BSc, University of Guilan*

08/2015
- Bachelor of Computer Engineering**

 - *University of Guilan*

 - **Final Project:** Rescreening of Halftone Images via Data-Driven Deep Learning Methods
 - **Class Rank:** 3
 - **GPA:** 18.64/20.00

Rasht, Iran
08/2015 - 08/2019
- Pre-university diploma of Mathematics and Physics**

 - *Shahid Mire-ei Highschool*

Karaj, Iran
09/2014 - 08/2015
- No Activity**

06/2014 - 09/2014
- High school diploma of Mathematics and Physics**

 - *Malek Ashtar Highschool*

Kamal Shahr, Iran
09/2011 - 06/2014

PUBLICATIONS

- **Doosti, Nikan**, Julian Panetta, and Vahid Babaei. "Topology Optimization via Frequency Tuning of Neural Design Representations." In Symposium on Computational Fabrication, pp. 1-9. 2021. (ACM)

TALKS

- Doosti, Nikan. 2022. "Neural Design Representations." Toronto Geometry Colloquium. March 4, 2022. toronto-geometry-colloquium.github.io. (Length: 10 mins., Video)

RESEARCH INTERESTS

- Deep Learning
- Physics-based Simulation
- Computer Graphics
- Computational Fabrication
- Digital Image Processing
- Computational Neuroscience

REFEREES

Dr. Vahid Babaei (Research Scientist)

Saarbrücken, Germany

- *Role: Research project supervisor*
Max Planck Institute for Informatics

vbabaei@mpi-inf.mpg.de

Prof. Julian Panetta (Assistant Professor)

Davis, USA

- *Role: Research project supervisor*
University of California, Davis

jpanetta@ucdavis.edu

Dr. Mojtaba Shakeri (Research Scientist)

Los Angeles, USA

- *Role: Undergraduate mentor and instructor*
MercuryGate (prev. Assistant Professor at University of Guilan, Rasht, Iran)

mojtaba.shakeri@gmail.com