

EDUCATION

- **Iran University of Science and Technology** Tehran, Iran
Master of Computer Engineering - Artificial Intelligence *Aug 2019 - Dec 2022*
 - **Thesis:** High Resolution Neural Topology Optimization via Differentiable Physics Engine
 - **Defense:** Defended with Full mark on 22 Oct 2022
 - **GPA:** 17.17/20.00
- **University of Guilan** Rasht, Iran
Bachelor of Computer Engineering *Aug 2015 - Aug 2019*
 - **Final Project:** Rescreening of Halftone Images via Data-Driven Deep Learning Methods
 - **Class Rank:** 3
 - **GPA:** 18.64/20.00

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 EXPERIENCE

- **Research Assistant** Saarbrücken, Germany
Artificial Intelligence aided Design and Manufacturing Group *Jul 2020 - Mar 2021*
Max Planck Institute for Informatics
 - 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

WORK EXPERIENCE

- **Full-time Machine Learning Engineer** Karaj, Iran
Applications of Data Science and Machine Learning in Tourism *April 2022 - Present*
Nahal Gasht
 - 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, DVC, MLflow, Git, FastAPI, Godot, etc

TEACHING EXPERIENCE

Head Teaching Assistant

- *Advanced Programming* *Aug 2018 - Feb 2019*
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

Head Teaching Assistant

- *Algorithms Design* *Aug 2018 - Feb 2019*
University of Guilan
 - Supervision: Dr. Mojtaba Shakeri
 - Held weekly 2-hour QA sessions and graded the assignments

Head Teaching Assistant

- *Computational Intelligence* *Feb 2018 - July 2018*
University of Guilan
 - Supervision: Dr. Mojtaba Shakeri
 - Designed programming assignments
 - Held weekly 2-hour QA sessions and graded all the assignments

VOLUNTARY ACTIVITIES

Mentor and Lecturer

- *An Open and Free Organization For Introducing AI and Mentorship* *2018 - Present*
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

Organizer and Mentor

- *An Open and Free Organization For Sharing Ideas, Showcasing Projects, and Mentoring Students* *2019 - 2021*
IUST Projects
 - 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

Member

- *Official forum with +50K members and authors of the PyTorch* *2018 - Present*
Official PyTorch Forum
 - A top member (15th) with 183 solutions and 566 posts (summary)
 - Commended by Thomas Viehmann for insightful posts

RESEARCH INTERESTS

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

AWARDS

- Accepted in M.Sc program without Entrance Exam as an Exceptional Talent 2019
- Tuition Waiver, M.Sc, Iran University of Science and Technology 2019
- Ranked 3rd among B.Sc graduates in Computer Engineering at the University of Guilan 2019
- Tuition Waiver, B.Sc, University of Guilan 2015

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*
Blume Global (prev. Assistant Professor at University of Guilan, Rasht, Iran)

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