

EDUCATION

- **Iran University of Science and Technology** Tehran, Iran
Master of Computer Engineering - Artificial Intelligence *Aug 2019 - Dec 2022*
 - **Thesis:** High Resolution Neural Topology Optimizaiton via Differentiable Physics Engine
 - **Defense:** Defended with Full mark on 22 Oct 2022
 - **GPA:** 17.17/20.00
- **University of Guilan** Rasht, Guilan
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

RESEARCH EXPERIENCE

- **Research Assistant** Saarbrücken, Germany
Artificial Intelligence aided Design and Manufacturing Group, *Oct 2020 - May 2022*
Max Planck Institute for Informatics
 - New computational method for designing geometries with structured release profile
 - Supervision of **Dr. Vahid Babaei**
 - Collaboration of **Prof. Julian Panetta** at University of California, Davis, USA.
 - Physics-based simulation of dissolution process
 - Measure release profile of dissolution process using novel capture system
 - Evaluate method with real data experiments
 - This project has been published and presented in ACM Symposium on Computational Fabrication 2021
 - This project was defined as my master's thesis

WORK EXPERIENCE

- **Full-time Machine Learning Engineer** Karaj, Iran
Artificial Intelligence aided Design and Manufacturing Group, *April 2022 - Present*
Nahal Gasht
 - New computational method for designing geometries with structured release profile
 - Physics-based simulation of dissolution process
 - Measure release profile of dissolution process using novel capture system
 - Evaluate method with real data experiments
 - This project has been published and presented in ACM Symposium on Computational Fabrication 2021
 - This project was defined as my MSc. thesis too

TEACHING EXPERIENCE

- **Head Teaching Assistant** *Aug 2018 - Feb 2019*
Advanced Programming
University of Guilan
 - Supervision: Dr. Ghasem Mirroshandel
 - Teach undergraduate students Java programming language
 - Designed and graded their assignments and final project
- **Teaching Assistant** *Feb 2017 - July 2017*
Algorithms Design
University of Guilan

- Supervision: Dr. Mojtaba Shakeri
- Helped with grading of the assignments

Head Teaching Assistant

- *Algorithms Design* *Aug 2018 - Feb 2019*
University of Guilan
 - Supervision: Dr. Mojtaba Shakeri
 - Held 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 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 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 siloed culture of the university through having open scientific/general discussions
 - Mentored junior students in preparation for going through 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
 - Commended by Thomas Viehmann for insightful posts

RESEARCH INTERESTS

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

AWARDS

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

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.

TALKS

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