

## EDUCATION

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

## PUBLICATIONS

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- **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

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- "Neural Design Representations." **Toronto Geometry Colloquium Advised by Alec Jacobson** - University of Toronto. March 4, 2022. [toronto-geometry-colloquium.github.io](https://toronto-geometry-colloquium.github.io). (Length: 10 mins., Video)

## RESEARCH EXPERIENCE

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- **Research Assistant (remote)** 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
  - Under Supervision of **Dr. Vahid Babaei** and with 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 which was defined as my master's thesis, has been published and presented in ACM Symposium on Computational Fabrication 2021
  - I spent 1500+ hours until the submission of concluding paper

## WORK EXPERIENCE

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- **Full-time Data Engineering and Data Science Specialist** Karaj, Iran  
*Specializing in Advanced AI Solutions for Business Optimization* *April 2022 - December 2023*  
*Nahal Gasht*
  - The Problem: **Implemented an AI-driven solution to address the challenge of prioritizing customers applications in the tourism sector.**
  - Impact: Decreased personnel error margin by 10%, **mitigating potential losses equivalent to 3.5 times the annual salary.** Also, **awarded for dedication and leadership**, leading to two promotions and a 70% salary increase within one year. Moreover, **I established myself as the primary resource for onboarding and training** new team members, receiving praise for my ability to simplify fundamental concepts.
  - Developed a comprehensive screening process automation from customer communication to application prioritization, filtering calls based on the complexity of inquiries, reducing manual workload by 40%.
  - Oversaw the development of a proprietary data extraction and preprocessing pipeline, resulting in a 35% reduction in poor-quality and unlabeled data.
  - Deployed a machine learning model (XGBoost) coupled with Explainable AI techniques to prioritize applications and provide transparent reasoning for each decision.
  - This experience demonstrates my ability to leverage AI technologies to optimize decision-making processes, drive significant business outcomes, and collaborate effectively with stakeholders from various backgrounds.

## TEACHING EXPERIENCE

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### 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

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### Mentor and Lecturer

- *An Open and Free Organization For Introducing AI and Mentorship* *2018 - 2021*  
*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 - 2022*  
*Official PyTorch Forum*
  - A top member (15th) with 183 solutions and 566 posts (summary)
  - Commended by Thomas Viehmann for insightful posts

## RESEARCH INTERESTS

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- Deep Learning and Machine Learning
- Computer Graphics and Physics-based Simulation
- Computational Fabrication
- Digital Image Processing
- Computational Health and Medicine

## AWARDS

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- Awarded for dedication and leadership at Nahal Gasht 2023
- 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

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**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)*

*mojtaba.shakeri@gmail.com*