Nikan Doosti (Officially: Mohammad DoostiLakhani)

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EDUCATION

Iran University of Science and Technology

Tehran, Iran

Master of Computer Engineering - Artificial Intelligence

Aug 2019 - Dec 2022

o Thesis: High Resolution Neural Topology Optimization via Differentiable Physics Engine

 $\circ\,$ Defense: Defended with Full mark on 22 Oct 2022

• **GPA:** 17.17/20.00

University of Guilan

Rasht, Iran

Aug 2015 - Aug 2019

Bachelor of Computer Engineering

o Final Project: Rescreening of Halftone Images via Data-Driven Deep Learning Methods

Class Rank: 3GPA: 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, Max Planck Institute for Informatics Jul 2020 - Mar 2021

- $\circ\,$ Novel self-supevised neural method for obtaining the optimum design showcased in Topology Optimization
- Supervision of Dr. Vahid Babaei
- o 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

Work Experience

Full-time Machine Learning Engineer

Karaj, Iran

• Applications of data science and machine learning in Search Engine Optimization (SEO)
Nahal Gasht

April 2022 - Present

- \circ Counseled employees, software engineers, and managers on revamping the data architecture, resulting in mitigating bad data by at least %35
- o Designed a full pipeline of data extraction, transformation, and loading targeting data science applications
- Integrated gamification objectives in designing and training machine learning models to produce engaging and informative user interactions
- Advocated for using best practices such as proper documentation, git, and open source, which led to full utilization of these topics in the daily workflow of the IT department

TEACHING EXPERIENCE

Head Teaching Assistant

• Advanced Programming

University of Guilan

- $\circ\,$ 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

Aug 2018 - Feb 2019

University of Guilan

- o 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

- o 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 Rasht School of AI 2018 - Present

- Held lectures around applications of AI, particularly digital image processing (Slides)
- o 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 IUST Projects

2019 - 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

Member

 Official forum with +50K members and authors of the PyTorch Official PyTorch Forum 2018 - Present

- 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 $vbabaei@mpi\hbox{-}inf.mpg.de$ Max Planck Institute for Informatics

Prof. Julian Panetta (Assistant Professor)

Davis, USA jpanetta@ucdavis.edu

• Role: Research project supervisor University of California, Davis

Dr. Mojtaba Shakeri (Research Scientist)

Los Angeles, USA

Role: Undergraduate mentor and instructor mojtaba.shakeri@blumeglobal.comBlume Global (prev. Assistant Professor at University of Guilan, Rasht, Iran)