Fatemeh Naeinian

New York University, Department of Electrical and Computer Engineering
fn2174@nyu.edu fatemeh-naeinian FatemehNaeinian

Education

New York University **Jan 2025 – present**
PhD in Electrical Engineering *New York City, USA*
- GPA : 4/4

University of Tehran **Sep 2019 – Jun 2024**
B.Sc in Electrical Engineering *Tehran, Iran*
- GPA : 18.53/20 (3.83/4)

University of Tehran **Sep 2021 – Jun 2024**
Minor in Computer Engineering *Tehran, Iran*
- GPA : 16.76/20 (3.4/4)

Publications

- **F. Naeinian**, E. Balazadeh, M. Tale Masouleh, "Mapping Human Grasping to 3-Finger Grippers: A Deep Learning Perspective," *2024 32nd International Conference on Electrical Engineering (ICEE)*, pp. 1–7, 2024.

Research Interests

- Applied Machine Learning
- Autonomous Driving
- Deep Learning
- Neural Network Architecture
- Optimization
- Domain Adaptation

Research Experience

Graduate Research Assistant, Learning Systems Laboratory **New York University**
Advisor : Prof. Anna Choromanska *2025 - present*
-

B.Sc Thesis, TaarLab: The Human and Robot Interaction Lab **University of Tehran**
Supervisor : Dr. Mehdi Tale-Masouleh *Jul. 2023 – Mar. 2024*
- **Dataset Generation:** Generated a **dataset** considering human hand features relevant to the 3-finger gripper to train a model with human behavior for grasping.
- **Pre-Processing:** Employed **MediaPipe** to extract and accurately label finger coordinates, enhancing the dataset and preparing high-quality input for the model.
- **Model Training:** Conducted an in-depth examination of grasping points for a 3-Finger Gripper using **Object Detection** and **Computer Vision** techniques.

Internship, Technical University of Munich **Remote**
Supervisor : Dr.-Ing Abdalla Swikir *Summer 2022*
- Conducted Boundary Computation for determining the **Reachable Set** of **Robotic Manipulators**.

Professional Experience

- **Mentor, NYU Arise Program**, New York, NY Summer 2025
  Supervised a team of high school students on a machine learning project, providing technical guidance on data preprocessing, model training, and presentation skills for a poster session.

Relevant Courses [1]

New York University

- Advanced Machine Learning † 4/4
- Digital Signal Processing † 4/4

University of Tehran

[1] Graduate Courses are indicated by †

- Neural Networks † 20/20
- Machine Learning † 20/20
- Artificial Intelligence 18.1/20
- Data Structures and Algorithms 20/20
- Advanced programming 18.6/20
- Operational Research 19.9/20
- Digital Control Systems 19.6/20
- Fundamentals of Mechatronics Engineering 19/20
- Engineering Probability and Statistics 18.43/20

Honors and Awards

- Received the School of Engineering (SoE) PhD Fellowship at NYU for an academic year, 2025.
- Ranked within the Top 20% among more than 116 B.Sc. students of the Electrical Engineering Department at the University of Tehran, 2023.
- Awarded the Supporter Foundation of the University of Tehran Honorable Award for Academic Excellence, 2019-2021.
- Ranked 3^{rd} in the Control branch of Electrical Engineering, 2023.
- Ranked among the top 0.1% (92^{nd}) in the nationwide university entrance exam in Mathematics and Physics fields for a B.Sc. degree, 2019.
- Ranked among the top 0.1% (91^{th}) in the nationwide university entrance exam in Foreign Languages fields for a B.Sc. degree, 2019.
- Gold Prize in Tebyan Student Projects Festival in computer seminars, 2017.

Skills

Programming Languages & Frameworks :

- Proficient in Python, MATLAB, C, C++, Verilog
- Familiar with TensorFlow, NumPy, Pandas, Pyomo, Matplotlib, Keras, scikit-learn, PyTorch, Seaborn, CSS, HTML, JavaScript

Softwares & Developer Tools :

- Familiar with Jupyter Notebook, Google Colab, ModelSim, Quartus II, MultiSim, STM32CubeIDE, LaTeX, Visual Studio Code, Arduino

Teaching Experience

Teaching Assistant at the University of Tehran:

- Neural Networks and Deep Learning †(Spring & Fall 2023)
- Linear Control Systems (Fall 2023)
- Probability and Statistics (Spring 2023)
- Linear Control Systems (Fall 2022)
- Electrical Machines (Fall 2021)
- Engineering Mathematics (Fall 2022 & Spring & Fall 2023)
- Operational Research (Fall 2023)
- Linear Algebra (Fall 2022)
- Electronics I (Spring 2021)
- Introduction to Electrical Engineering (Spring 2021)

Languages

- **English** [Advanced Proficiency]
  TOEFL IBT (Oct. 7, 2023) : 107/120 (**Reading**: 29, **Listening**: 29, **Speaking**: 24, **Writing**: 25)
- **Persian** [Native]