S.M.H. Hosseini

Website: smh-hosseiny.github.io
Email: hosseiny290@gmail.com
LinkedIn: s-m-hossein-hosseiny
GitHub: github.com/smh-hosseiny

Education

York University — Toronto, Canada
MASc. in Electrical and Computer Engineering — 2022–2024

University of Tehran — Tehran, Iran
BSc. in Electrical Engineering, GPA: 3.6 (17.16/20) — 2016–2021

- Thesis: "Single-view 3D Reconstruction of Surface of Revolution"

Experience

Graduate Research Assistant at Elder Laboratory — Toronto, Canada
Working on monocular depth estimation. — 2022-2024

Research Assistant at NBML — Tehran, Iran
Implementing a data-driven framework for Fiber Tractography — 2021 - 2022

- Proposing a novel convolutional + transformer model to estimate fODF from MRI data
- Introducing an automatic end-to-end tractography pipeline

Research Intern at Daha Tech — Tehran, Iran
Developing a wireless indoor positioning system using BLE antennas — Summer 2019

- Implementing real time locating system (RTLS) using Kalman filter and clustering algorithms

Publications

1. S.M.H. Hosseini, M. Hassanpour, S. Masoudnia, S. Iraji, S. Raminfard, M. Nazem-Zadeh, "CTtrack: A CNN+Transformer-based framework for fiber orientation estimation & tractography," *Neuroscience Informatics*, Volume 2, Issue 4, 2022.
2. S.M.H. Hosseini, S.M. Nasiri, R. Hosseini, H. Moradi, "Single-view 3D Reconstruction of Surface of Revolution," *Pattern Recognition Letters*, submitted.

Teaching

- **Student Teaching Assistant** at York University — Fall 2022
  Computational Thinking
- **Student Teaching Assistant** at University of Tehran — Fall 2020
  Linear Control System
- **Student Teaching Assistant** at University of Tehran — Fall 2020
  Industrial Control
- **Student Teaching Assistant** at University of Tehran — Fall 2019
  Engineering Mathematics

Skills

- **Programming:** Python, Matlab, C/C++
- **M. Learning:** Pytorch, TensorFlow, Google Colab
- **Tools/Techs:** LaTeX, Ubuntu
- **Hardware/System Design:** AVR, Proteus, Simulink, Altium Designer

Languages

- **English:** Proficient - TOEFL iBT score: 108/120
- **Persian:** Native language

Projects

- **Transformer-based Framework for Fiber Orientation Estimation & Tractography**
  Research Assistant (Python, 2021)
- **Single-view 3D Reconstruction of SOR**
  Bachelor's Thesis (Matlab, 2021)
- **Voice Gender Classification**
  Pattern Recognition (Python, 2020)
- **Route Optimization**
  Operational Research (Python, 2019)
- **Text Generator**
  Neural Network (Python, 2020)
- **Movie Server**
  Advanced Programming (C++, 2019)
- **Super Mario Game**
  Advanced Programming (C++, 2019)
- **Survey of Feature Selection Algorithms**
  Pattern Recognition (Python, 2020)
- **Decision Tree Classifier**
  Intelligent Systems (Python, 2019)
- **YOLOv5 fine-tuning to detect chess pieces**
  Neural Network (Python, 2020)

References

- **Prof. James Elder** Toronto, Canada
  Professor at Department of Electrical Engineering & Computer Science, York University, Member of the Center for Vision Research, Director of Elder Laboratory
- **Prof. Reshad Hosseini** Tehran, Iran
  Assistant Professor at Electrical and Computer Engineering School, University of Tehran, Director of Computational Audio-Vision Lab
- **Dr. Masoud Hassanpour** Tehran, Iran
  Researcher at the Molecular and Cellular Imaging Center, Advanced Medical Technologies and Equipment Institute (AMTEI), Tehran University of Medical Sciences
- **Prof. Manouchehr Moradi** Tehran, Iran
  Associate Professor at Electrical and Computer Engineering School, University of Tehran, Director of Advanced Robotics and Intelligent Systems Lab
- **Prof. Fariba Bahrami BoodeLalou** Tehran, Iran
  Associate Professor at Electrical and Computer Engineering School, University of Tehran, Director of Human Motor Control and Computational Neuroscience Lab