University of Tehran–School of Electrical and Computer Engineering
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Yalda Foroutan

Research Interests

- Deep Learning
- Machine Learning
- Computer Vision

Education

- **Master of Science** *2017–2020*
  University of Tehran
  Electrical Engineering: Integrated Circuits
  - GPA: 3.77/4 (17.22/20)
  - Thesis: Control of Computer Mouse Using Hand Movement Detection in Motion Pictures
- **Bachelor of Science** *2012–2017*
  Amirkabir University of Technology
  Electrical Engineering: Control Engineering
  - Last Two Years GPA: 3.34/4 (16.64/20)
  - Thesis: Driver's Consciousness Level Analysis Using EEG Signals

Publications

- Control of computer pointer using hand gesture recognition in motion pictures *Fall 2020*
  - Yalda Foroutan, Prof. Ahmad Kalhor, Mr. Saeid Mohammadi Nejati, Prof. Samad Sheikhaei
  - Under Submission in Computers & Electrical Engineering

Honors

- Granted Admission from Talented Student Office of University of Tehran for Ph.D. Study, 2020.
- Ranked 2nd in Iran Mathematics Olympiad PAYA, 2008.
- Ranked 1st in Abadan Mathematics Olympiad, 2006.
- Recognized Exceptional Talent by *National Organization for Development of Exceptional Talents (NODET)*, 2005.

Research Experiences

- **Research Assistant in University of Tehran** *2018–present*
  - Advanced Circuits for Data Communication Laboratory
    - Under Supervision of *Prof. Samad Sheikhaei*

Teaching Experiences

- **Teaching Assistant for Neural Networks and Deep Learning** *Spring 2020*
  - Under Supervision of *Prof. Ahmad Kalhor*
- **Teaching Assistant for Electronic 1** *Spring 2020, Fall 2019*
  - Under Supervision of *Prof. Mohammadreza Kolahdouz*
- **Teaching Assistant for Electronic 3** *Fall 2019*
  - Under Supervision of *Prof. Omid Shoaei*

Selected Academic Projects

Master of Science Thesis — University of Tehran

- **Control of Computer Mouse Using Hand Movement Detection in Motion Pictures**
  - collected 6720 samples from 15 persons' hand gestures, built and optimized a classification CNN model as well as similarity NN using TensorFlow in Google Colab.

Bachelor of Science Thesis — Amirkabir University of Technology

- **Driver's Consciousness Level Analysis Using EEG Signals**
  - built and optimized classification SVM, kNN, and NN simulated by Matlab.

Neural Networks and Deep Learning

- **Designing a CNN Classifier for Fashion MNIST Dataset**
- **Designing a RNN Network for Stock Prediction**
- **Designing a RNN Network for Text Prediction Based on Shakespeare's Book**
- **Designing GAN Networks on Fashion MNIST and CIFAR-10 Datasets**
  - Using DCGAN, WGAN, ACGAN networks
  - Improving the GAN networks with one-sided label smoothing and adding noise

Other Projects

- **Simulation of Bees Algorithm by Matlab**
- **Controlling UGV Robot Simulated by C**
- **Image Edge Detection Designing and Implementation by "Keil uvision"**
- **Designing a Controller for Router Robot Simulated by Matlab**
- **Designing a Filter For Communication Systems Simulated by Matlab**
- **Image Processing and Car Race Simulated by Codeblocks**
- **Designing, Simulating and Implementing CPU in Xilinx ISE Design Suite**
- **Gate-level Designing and Simulating 8bit Pipeline Converter in Hspice**

Online Courses

- Neural Networks and Deep Learning on Coursera
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization on Coursera
- Structuring Machine Learning Projects on Coursera
- Convolutional Neural Networks on Coursera
- Sequence Models on Coursera
- Convolutional Neural Networks in TensorFlow on Coursera
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning on Coursera

Computer Skills

Programming Languages

- **Python**
  - **TensorFlow**
  - **OpenCV**
  - **PyTorch**
- Matlab
- C/C++
- Verilog/VHDL

Other OSs and Tools

- macOS
- Linux(Ubuntu)
- Microsoft Windows
- Xilinx ISE Design Suite
- LaTeX
- Excel

References, Further information, and Proofs are available upon request.