# Yalda Foroutan

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## Research Interests

Deep Learning • Machine Learning
Human-Computer Interaction

## Education

### M.Sc. | Electrical Engineering

University of Tehran | 2017 - 2020

- GPA: 3.77/4 (17.22/20)
- Thesis: Control of Computer Mouse Using Hand Gesture Recognition
- Advisors: Ahmad Kalhor, Samad Sheikhaei

### B.Sc. | Electrical Engineering (Control)

Amirkabir University of Technology (Tehran Polytechnic) | 2012 - 2017

- Last-two-year GPA: 3.34/4 (16.64/20)
- Thesis: Driver's Consciousness Level Analysis Using EEG Signals
- Advisor: Mohammad A. Khosravi

### Selected Courses

- Deep Learning (20/20)
- Computer Programming (C++) (18.6/20)
- Computational Intelligence (18/20)
- Linear Algebra (16.9/20)
- Engineering Mathematics (19.25/20)

## Skills

### Programming Languages

Fluent: Python
Familiar: MATLAB • C/C++

### Machine Learning Frameworks and Libraries

TensorFlow • Keras • OpenCV • PyTorch

### Online Courses on Coursera

- Neural Networks and Deep Learning (Certificate)
- Improving Deep Neural Networks (Certificate)
- Structuring Machine Learning Projects (Certificate)
- Convolutional Neural Networks (Certificate)
- Convolutional Neural Networks in TensorFlow
- Introduction to TensorFlow
- Sequence Models

### Languages

English: IELTS Mock Test: 7/9 (Exam on 29th May)
Farsi: Native Speaker

## References

- Ahmad Kalhor *(akalhor@ut.ac.ir)*
- Samad Sheikhaei *(sheikhaei@ut.ac.ir)*
- Mohammadreza Kolahdouz *(kolahdouz@ut.ac.ir)*

## Publication

**Control of Computer Pointer Using Hand Gesture Recognition in Motion Pictures** [arXiv]
Yalda Foroutan, Ahmad Kalhor, Saeid Mohammadi Nejati, Samad Sheikhaei
Under submission in *Image and Vision Computing*

## Research Experience

**Research Assistant in University of Tehran** | 2018 - 2020
Advanced Circuits for Data Communication Laboratory, Samad Sheikhaei
I have contributed to design an algorithm for computer pointer based on hand gesture recognition for Windows and Linux.

## Honors

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

## Teaching Experience

Teaching Assistant at University of Tehran
**Neural Networks and Deep Learning** | Spring 2020
Designing projects, managing teaching assistant sessions
Course Responsible: Ahmad Kalhor
**Teaching Assistant for Electronic 1** | Spring 2020, Fall 2019
Designing homework and quizzes, holding teaching assistant sessions
Course Responsible: Mohammadreza Kolahdouz
**Teaching Assistant for Electronic 3** | Fall 2019
Grading homework
Course Responsible: Omid Shoaei

## Selected Academic Projects

### M.Sc. Thesis | University of Tehran

Control of Computer Mouse Using Hand Movement Detection
collection of 6720 samples from 15 persons' hand gestures, built and optimized classification CNN model and similarity NN (TensorFlow in Google Colab)

### B.Sc. Thesis | Amirkabir University of Technology

Driver's Consciousness Level Analysis Using EEG Signals
Optimized classification NN, SVM and kNN (MATLAB)

### Neural Networks and Deep Learning (Python)

- Design of a CNN Classifier for Fashion MNIST Dataset
- Implementation of an RNN Network for Stock Market Prediction
- Text Generation Based on Shakespeare's Book with an RNN Network
- Development of 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 (MATLAB)
- Control of UGV Robot (C)
- Design of a Controller for Router Robot (MATLAB)
- Design of a Filter For Communication Systems (MATLAB)
- Image Processing and Car Race Simulated (Codeblocks)