Javad Sheikh

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Education

Amirkabir University of Technology   Tehran, Iran

M.Sc. in Computer Engineering, Minor in Artificial Intelligence and robotics   *Sep. 2018 – Now*

- **Thesis:** "Anomaly detection on time series using deep neural networks."
- **Advisor:** Prof. Safabakhsh

Amirkabir University of Technology   Tehran, Iran

B.Sc. in Biomedical Engineering, Minor in Bioelectrics   *Sep. 2013 – Sep. 2018*

- **Thesis:** "Design and Implementation of mobile room lighting control equipment for patients with paraplegic patients."
- **Advisor:** Dr. Ahmadi Pajouh

Shahid Beheshti Highschool   Gorgan, Iran

Diploma in Mathematics and Physics Discipline   *Sep. 2009 – Sep. 2013*

- Under the supervision of NODET (National Organization for Developing Exceptional Talents)

Publications

- **Book chapter:**
  Shariatzadeh F.J., Salar Amoli M., Faghihi F., **Sheikh J.**, Sadeghi P., et al.; 2021; *Sutures and surgical instruments*; Medical Equipment;

- **Journal papers:**
  Sheikh V., RezaeiMoghaddam H., Jafary R., Gholami Z., **Sheikh J.**; 2020; *Design, construction and performance evaluation of an automatic weighing lysimeter.*; Water and Irrigation Management; 10(1); pp.61-73.
  DOI: dx.doi.org/10.22059/jwim.2020.294404.738

- Nazarimehr F., **Sheikh J.**, Ahmadi M.M., Pham V.T., Jafari S.; 2018; *Fuzzy predictive controller for chaotic flows based on continuous signals.*; Chaos, Solitons & Fractals; 106; pp.349-354.
  DOI: doi.org/10.1016/j.chaos.2017.12.005

Selected Academic Projects

Tracking moving object in video | *Python, OpenCV*

- Extracting key points using Brief, Freak, Surf, and Sift
- Following key points utilizing RANSAC and Least Median

Generative Adversarial Network | *Python, Tensorflow, Google Colab, Gradient Tape*

- Generation cat and dog pictures with GAN network using the cats and dogs data set

Semantic Segmentation | *Python, Tensorflow, Google Colab, CNN*

- Semantic segmentation of KITTI data set using convolutional neural networks

Machine Translation | *Python, Tensorflow, LSTM, GRU, Attention*

- Designed an Encoder-Decoder Recurrent Neural Network model with attention for Deutsch to English translation

Fuzzy Neural Network | *Python*
- Estimation of Mackey-Glass time series with a fuzzy neural network

Machine learning Projects | *Python, scikit-learn*
- Clustering tasks using Kmeans, DB-Scan and Hierarchical clustering
- Classification with KNN with k found using K—fold-cross-validation
- Classification with C4.5, CART, ID3 Decision Trees
- Classification with Random Forest
- Classification of car evaluation data set with Naive Bayes and Logistic Regression
- Classification of handwritten digits data set with SVM

Parameter Estimation | *Matlab, Optimization*
- Parameter Estimation of the Rulkov Neuron Map using Interior search algorithm)

Working Experience

freelance AI engineer   Apr. 2019 – Present

Retinopathy detection App Development
- Preprocessed retina images from Kaggle Diabetic Retinopathy data set
- retrained DenseNet-169 on a data set previously preprocessed
- Developed AI mobile application to detect diabetic retinopathy

Time series forecasting
- Deployed different forecasting methods like Arima, Sarima, and recurrent neural networks

Artificial Intelligence App Developer   Sep. 2018 – Mar. 2019

AI engineer at Sibbank   *Tehran*
- Researched and assessed different mobile compatible deep learning structures
- Used transfer learning to retrain Mobilenet-192
- Developed AI mobile application to read credit card number and expiration from images taken with mobile camera

Teaching Experience

Software Tutor | *Python, Tensorflow, Google Colab*   Spring 2019
- Department of Computer Engineering, Amirkabir University of Technology

Software Tutor | *MATLAB, Simulink*   Spring 2015
- Department of Biomedical Engineering, Amirkabir University of Technology

Languages

English (IELTS Academic CEFR level: C1)   *Listening: 8.5, Reading: 8.5, Writing: 6.5, Speaking: 7*

German (Elementary)

Technical Skills

Programming Languages: Python, Java, Matlab, C/C++, SQL, JavaScript, HTML/CSS

Developer Tools: Visual Studio Code, Android Studio, Google Colab, Kaggle

Version Control: Git, GitHub, GitLab

Selected Python Libraries: Tensorflow, Pytorch, OpenCV, Pandas, NumPy, Matplotlib, Scipy, Scikit-Learn

Typesetting: TeX, Word

Operating Systems: Windows, Ubuntu

Honors & Awards

M.Sc. National University Entrance Exam
- Achieved the 87th place in the national M.Sc entrance exam in Computer Engineering

B.Sc. National University Entrance Exam
- Ranked in the top 0.5% among 251,000 students in the national university entrance exam in mathematics and physics discipline

B.Sc. National University Entrance Exam
- Ranked in the top 5% among 10,000 students in the national university entrance exam in foreign languages discipline

High School Olympiad
- being accepted at the first stage of national Chemistry Olympiad (2011)

Research Interests

- Machine Learning
- Artificial Neural Networks
- Biologically Plausible Neural Networks
- Anomaly Detection
- Computer Vision
- Medical Image Analysis

References

Prof. Safabakhsh, *Department of Computer Engineering, Amirkabir University of Technology*
Email: safa@aut.ac.ir

Asst. Prof. Nazerfard, *Department of Computer Engineering, Amirkabir University of Technology*
Email: nazerfard@aut.ac.ir

Assoc. Prof. Jafari, *Department of Biomedical Engineering, Amirkabir University of Technology*
Email: sajadjafari@aut.ac.ir