## Sepehr Asgarian


**Contact Information**

Dept. Computer Engineering
Amirkabir University of Technology
No. 424,
Hafez Ave.
Tehran, Iran 15914

Email: sepehr.asgarian@aut.ac.ir
Twitter: twitter.com/sepehrasgarian
Cell: (+98)991 201 2638
Linkedin: http://www.linkedin.com/in/SepehrAsgarian
Projects: Github


**Research Interest**

- Machine Learning
- Natural Language Processing
- Data Mining
- Computer Vision

**Research Experience**

- **Twitter Sentiment Analysis and Topic Modeling on COVID-19 Outbreaks** 2019–2020
  With the unexpected emergence of COVID-19 in December 2019, In this study we used the Twitter data about 14,607,013 tweets, retweets, and replies with a different COVID-19 hashtags. Tweets were restricted to English language only for the sentiment and topic modeling analysis. In this research we used different methods to record emotions in tweets during COVID-19 pandemic.
- **Deep Neural Prediction for Confirmed, Recovered, and Dead Cases of the COVID-19** 2019–2020
  Due to the pandemic growth of COVID 19 in all around the world in this research, we used seven different Hybrid, Deep Neural Network models to predict up to the next 14 days of confirmed, recovered, and dead cases. In this study, China, Italy, and Iran are used to test how much our model can predict well. This research results is submitted for possible publication to the journal of Health Information Science and Systems.
- **Application of deep and artificial neural network for rapid estimation of buildings responses** 2019–2020
  In this study, Artificial Neural Network (ANN) and Deep Neural Network (DNN) as a form of artificial intelligence are used to rapidly estimate the structural responses such as drift, acceleration and velocity subjected to earthquake for urban or regional risk assessment applications.This research results is submitted for possible publication to the journal of Structural Control and Health Monitoring.

**Education**

Amirkabir University Of Technology (Tehran Polytechnic), Teharn, Iran

- B.Sc in . Computer Engineering, 2016–2020(expected)
  - Cumulative GPA till now:
    **Via 135 units: 16.92/20 ≅ 3.54/4**
    **GPAoverthepasttwoyears : 17.01/20 ≅ 3.65/4**

Danesh High School, Tehran,Iran. 2014–2015

- Diploma in Physics and Mathematics Discipline. GPA: **18.92/20**

Balwhyn High School, Melbourne, Australia. 2013–2014

**Relevant Education and Course Work**

- Machine Learning(MSc): 18.5/20
- Data Structure and Algorithm: 20/20
- Signal and Systems: 18.25/20
- Linear Optimization: 18.8/20
- Principles of Management: 19/20
- Algorithm Design: 20/20
- Advanced Programming: 20/20
- Computer Architecture: 19.1/20
- Engineering Ethics: 20/20
- Computer Networks 17.6/20

**Teaching Experience**

Staffordshire university,Staffordshire, England
Teaching Assistant

- AI in Games, Instructor: Dr.Seed Shiry Ghidary Fall 2020

Amirkabir University Of Technology, Tehran, Iran
Teaching Assistant
(sample graded material and student evaluations available upon request)

- Compiler Design, Instructor: Dr.Mohammadreza Razzazi Fall 2020
- Signals and Systems, Instructor: Dr.Mehdi Rasti Fall 2020
- Computer Architecture, Instructor: Dr. Hamid R. Zarandi Spring 2020
- Principles of Computer Programming(English), Instructor: Dr.Shiry Ghidary Spring 2019
- Data Structures & Algorithms, Instructor: Dr.Mohammad Akbari Spring 2019 & Fall 2019
- Principles of Computer Programming, Instructor: Dr.Shiry Ghidary Spring 2019

## Presentation

- Undergraduate Talk 2018, entitled " Auto Encoder " Summer 2020
- Undergraduate Talk 2018, entitled " Principal Component Analysis " Fall 2018
- Presentation on Youtube Fall 2014

## Technical Skills

- **Theorical Background**: Experienced in Design of Algorithms,Data Structures.
- **Programming & Scripting Languages**: Expert in: Java, C/C++, Python.
  Familiar with: Matlab, VHDL, Verilog, Assembly, Shell Script.
- **Data Mining & Visualization**: Scikit-Learn, Pandas, Matplotlib, Numpy, ploty, seaborn
- **Machine learning & Deep learning** : keras, Scikit-Learn, Tensorflow
- **Database Management Systems** : Familiar with: MySQL, MongoDB.
- **Operating System** : Windows, Linux
- **Other**: Metatrader4,LaTeX, Google AdWords, Google AdSense, Orcad Pspice, Atmel Studio

## Honors and Awards

- Rank top 10 best teams out of 200 teams in Algorithm Trading Competition Tehran, Iran, (2020)
- Ranked in the top 2% out of 3000 applicants of Bootstrap Lean Startup training program at Sharif University of Technology(Oct 2016 - Jun 2017)
- Ranked in top 3% among all students in university entrance exam (Approximately 250000 applicants) in Math. and Eng., Iran, (2016)

## Notable Projects

- **Predicting the Number of Infected Cases of COVID-19 Using Hybrid Deep Learning Methods (Submitted in Iran National Science Foundation for grand):** *Spring 2020*
  The project I am working under supervision of Dr. Momtazi. The main goal of this project is to use a combination of several advanced artificial intelligence algorithms to accurately detect future trends and predict all three cases of confirmed, recovered, and dead cases of COVID19.
- **TRUST Platform:** *Fall 2019*
  In this project different Machine Learning and Deep learning methods is used to predict dynamic response of buildings during earthquake.
- **Stock Market Prediction Based on Generative Adversarial Network & Sentiment Analysis:** *Summer 2019*
  This project is my final bachelor project under supervision of Dr. Momtazi. In this study we are proposing a new architecture of combination of sentiment analysis and generative adversarial network(Gan) to predict close price of different stock markets. The work is still ongoing.
- **Search Engine:** *Fall 2019*
  A Complete implementation of Persian and English language search engine. In order to increase performance of this Search Engine some Retrieval methods is applied such as: Elimination Index, Cosine Similarity, Champion List
- **Dimensional-Reduction-Using-Genetic-Algorithms** *Fall 2019*
  Used the DEAP library to choose a subset of features that gives better accuracy than the baseline. Gaussian naïve Bayes and logistic regression is used for fitness function. Implemented for the computational Machine Learning course.

## Work Experience

Institute for Research in Fundamental Sciences (IPM), Tehran,Iran. June 2019–September 2019

## Extra-Curricular Activities

- **Member of Organization Committee** (Dec 2019 & Mar 2019)
  4th & 5th Amirkabir International Artificial Intelligence Contests

## Hobbies

- Guitar
- Table Tennis
- Basketball

## Language proficiency

- **Persian** (Native or bilingual proficiency)
- **English** (Professional working proficiency)
  - TOEFL iBT : Test scheduled for Nov 14st

## References


- Saeedeh Momtazi, Assistant Professor
  Computer Eng. Dept, Amirkabir University of Technology
  Email: momtazi@aut.ac.ir
- Mohammad Akbari, Assistant Professor
  Mathematics and Computer Science, Amirkabir University of Technology
  Email: akbari@aut.ac.ir
- Saeed Shiry Ghidary, Assistant Professor
  Computer Eng. Mathematics and Computer Science, Amirkabir University of Technology
  Email: shiry@aut.ac.ir