Sepehr Asgarian

Contact Information

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Projects: Github

Research Interest

- Machine Learning
- Signal Processing
- Biomedical Engineering
- Finance

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
    GPA over the past two years: 17.01/20 ≅ 3.65/4

Danesh High School, Tehran,Iran. 2014–2015

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

Balwyn High School, Melbourne, Australia. 2013–2014

Publications

- S.Asgarian, S.Momtazi, K.Hashemi,**"Deep Neural Prediction for Confirmed, Recovered, and Dead Cases of the COVID-19"**, submitted to the journal of Expert Systems.
- M.Mohammadgholiha, S.Asgarian, P.Toofani Movaghar, S.Soroushian,**"Application of deep and artificial neural network for rapid estimation of buildings responses"**, submitted to the journal of Structural Control and Health Monitoring.
- M.Akbari, S.Asgarian, K.Hashemi,**"Sentiment Analysis and Topic Modeling on Twitter"**, An approach of opinion mining to the COVID-19 crisis (in preparation)

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
Unofficial Teaching Assistant

- Artificial Intelligence for Computer Games, Instructor: Dr.Seed Shiry Ghidary Fall 2020
- Robot Ethics In An AI world, 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

Research Experience and Notable Projects

- **Predicting the Number of Infected Cases of COVID-19 Using Hybrid Deep Learning Methods** *Fall 2020-now*
  I am working on this project under supervision of Dr. Momtazi which is submitted as a proposal to INSF(Iranian National Science Foundations) for funding. 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 up to the next 14 days.

- **Twitter Sentiment Analysis and Topic Modeling on COVID-19 Outbreaks** *Fall 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. Sentiment Analysis techniques using the Empath lexical library and Topic Modeling by Latent Dirichlet Allocation(LDA) were then performed. The goal is to extract People's concerns and emotions during the pandemic.

- **TRUST Platform:** *Fall 2019*
  In this project different Machine Learning and Deep learning methods is used to predict dynamic response of buildings during earthquake

- **Search Engine, a complete implementation of Persian and English language search engine** *Fall 2019*
  In order to increase performance of this Search Engine, some Retrieval methods such as Elimination Index, Cosine Similarity and Champion List is applied.

- **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.

Presentation

- Undergraduate Talk 2020, entitled "Auto Encoder ", Summer 2020
- Undergraduate Talk 2018, entitled "Principal Component Analysis ", Fall 2018
- Presentation of Elementary Chemistry 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.
- **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)

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)
  - Duolingo : 120(Literacy=130, Conversation=105, Comprehension=115, Production= 125)
  - TOEFL iBT : Test scheduled for Jan, 9

References

- Saeedeh Momtazi, Assistant Professor
  Computer Eng. Dept, Amirkabir University of Technology
  Email: momtazi@aut.ac.ir
- Siavash Soroushian, Assistant Professor
  Civil Engineering, K. N. Toosi University of Technology
  Email: ssoroushian@kntu.ac.ir
- Saeed Shiry Ghidary, Assistant Professor
  Computer Eng. Mathematics and Computer Science, Amirkabir University of Technology
  Email: shiry@aut.ac.ir

More references are available upon request.