Fatemeh Asgarinejad

fasgarinejad@ucsd.edu | google scholar| Linkedin | Stack Overflow | github | +1 (858) 203 8774

Research Interests

Machine Learning
Process Mining
Data Science

Education

UC San Diego PhD (joint with SDSU) in Machine Learning and Data Science (GPA: 3.95/4), 2020−present

Courses (UC San Diego):

Big Network Data: A	Computational Data Analysis and Product Development: A
Programming for Data Analysis: A	Machine Learning Algorithms: A-
Prob. and Stat. for Data Science: A	Mathematics for Robotics: A+

Shariaty Technical University B.Sc. in Computer Software Engineering, Tehran, Iran, 2016

Publication

- **F. Asgarinejad**, C. Johnson, T. Rosing, S. Ren "Determining Trending Skills within Hierarchical Clustering of Job Notices using Hyperdimensional Computing", *to be submitted* to AAAI Conference on Artificial Intelligence 2022
- **F. Asgarinejad**, R. Hildebrant, T. Rosing, S. Ren "Predicting the Outcome of Business Processes based on Event Logs using Hyperdimensional Computing", *submitted* to IEEE Tran. on Knowledge and Data Engineering, 2021
- Z. Zhang, R. Hildebrant, **F. Asgarinejad**, N. Venkatasubramanian, S. Ren, "Improving Process Discovery Results by Filtering Out Outliers from Event Logs with Hidden Markov Models", CBI, 2021
- R. Garcia, **F. Asgarinejad**, *et al.*, "TruLook: A Framework for Configurable GPU Approximation", DATE, 2021
- **F. Asgarinejad**, A. Thomas, T. Rosing, "Detection of Epileptic Seizures from Surface EEG using Hyperdimensional Computing", EMBC, 2020
- B. Khaleghi, S. Salamat, A. Thomas, **F. Asgarinejad**, Y. Kim, T. Rosing "SHEARer Highly-Efficient Hyperdimensional Computing by Software-Hardware Enabled Multifold Approximation", ISLPED, 2020

Research Experience

- **Graduate Research Assistant, University of California San Diego and San Diego State University** (Prof. Tajana Rosing and Prof. Shangping Ren), July 2020−present
- **Research Intern, University of California San Diego** System Energy Efficiency Lab (Prof. Tajana Rosing), June 2019–June 2020
- **Research Intern, Sharif University of Technology** Data Storage, Networks, and Processing Lab (Prof. Hossein Asadi), June 2017−2018
- **Bachelor Thesis**: Novel FPGA Placement Algorithm Using a Hybrid Genetic Algorithm-Simulated Annealing

Projects

- **Determining Trending Skills within Hierarchical Clustering of Job Notices using Hyperdimensional Computing**: Extracting keywords from job notices using NLP techniques, creating a hierarchical clustering of jobs using hyperdimensional computing ML method, and determining trending skills with high accuracy and performance.
- **Predicting the Termination of Ongoing Business Processes based on Event Logs using Hyperdimensional Computing**: Accurate prediction of processes outcome by considering patterns and attributes of events using hyperdimensional computing, and implementing various ML techniques such as LSTM for comparison.
- **UCSD ECE 229 Course Project:** Creating a book search and recommendation dashboard [**link**]
- **UCSD ECE 227 Course Project:** Infection forecasting of COVID-19 using Modified SEIR Model with vaccination prediction in the United States [**link**]

- **UCSD ECE 143 Course Project:** Genre prediction based on book title and analysis over Goodreads datasets [**link**]
- **UCSD CSE 251A Course Project:** Prototyping (effective data sub-sampling) to implement KNN classifier of MNIST dataset using KMeans [**link**]
- **UCSD ECE 225A Course Project:** Relationship between race/gender diversities distributions and Democratic/ Republican votes in Senate election using machine learning techniques [**link**]
- **UCSD SEElab Website:** Designed back-end and front-end from scratch [**link**]
- **UCSD Micromasters DSE200x:** Correlation of movies genres with poster color features using ML techniques

Teaching and other Experiences

- **Instructor**: SDSU undergraduate general studies, Fall 2021
- **Teaching Assistant**: UCSD CSE 20 Discrete Mathematics (Prof. Jones), Summer Session 1, 2021
- **Teaching Assistant**: UCSD DSE220x Machine learning Fundamentals (Prof. Dasgupta), Sep 2019−Aug 2020
- **Human Welfare Volunteer:** Volunteer member of Yarigaran charity community of Sharif University of Technology (2014−2016)

Certificates

- **UCSD Micromasters:** Python for Data Science (100+ hours)
- **UCSD Micromasters:** Probability and Statistics in Data Science (150+ hours)
- **UCSD Micromasters:** Machine Learning Fundamentals (100+ hours)
- **UCSD Micromasters:** Big Data (120+ hours, ongoing)
- **HarvardX:** Using Python for Research (48+ hours)
- **Eindhoven University of Technology**: Process Mining: Data science in Action (22 hours, ongoing)
- **Deep Learning A-Z**^{TM}: Hands-On Artificial Neural Networks (41 hours)
- **Machine Learning A-Z**^{TM}: Hands-On Python & R in Data Science (23 hours)
- **Microsoft**: Introduction to Python Fundamentals (20+ hours)

Achievements

- **Ranked 20**th (top 0.1%) in Iran national university entrance exam for *M.Sc. in Computer Science*, admitted to the University of Tehran, 2*nd* best national university, 2017
- **Ranked 130**th in Iran national university entrance exam for *M.Sc. in Computer Engineering*, admitted to Amir-Kabir University of Technology (3rd best national university), 2017
- Ranked top 3% (among 300,000) in Iran national university entrance for B.Sc. in engineering fields, 2012
- Ranked top 1% in Iran national university entrance for B.Sc. in English studies, 2012

Skills

Programming Languages: Demonstrated Proficiency: Python, R, HTML; Basic: Javascript, C#, Django, SQL
Tools: Jupyter, Github, Gephi, WEKA, iMovie, LaTeX; Basic: ProM, MySQL
Operating Systems: Mac OS X, Linux
Miscellaneous: NumPy, Pandas, Sklearn, Keras, NLTK, Matplotlib, SciPy, CSS, UNIX, Bootstrap

Test Scores

GRE: 320/340: Quantitative Reasoning: 167 Verbal Reasoning: 153 Analytical Writing: 3.5
TOEFL: 103/120: Reading: 25 Listening: 26 Speaking: 26 Writing: 26

References

Professor Tajana Rosing, University of California, San Diego (tajana@ucsd.edu), 9500 Gilman Dr, La Jolla, CA 92093

Professor Shangping Ren: San Diego State University (sren@sdsu.edu), 5500 Campanile Drive, San Diego, CA 92182

Residency Status: Permanent Resident (Green Card Holder)