Samin Semsar

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OBJECTIVE

I am a doctoral student in Information Systems, actively pursuing a technical position within a dynamic organization where I can apply my expertise in machine and deep learning for the analysis of data.

EDUCATION

Ph.D., Information Systems Baltimore, Maryland | Expected: 2025
UNIVERSITY OF MARYLAND BALTIMORE COUNTY
Relevant Courses: Computational Research Methods, Data Mining, Deep Learning, Causal AI, Advanced Quantitative Research Methods, Software Testing

B.S., Computer Engineering (Valedictorian) Baharestan, Isfahan, Iran | 2020
SHEIKHBAHAEI UNIVERSITY
Relevant Courses: Data Structure, Artificial Intelligence, Discreet Mathematics, Engineering Statistics and Probability, Engineering Mathematics, Differential Equations, Database, Software Engineering

B.A., English Translation Baharestan, Isfahan, Iran | 2012
SHEIKHBAHAEI UNIVERSITY

AWARD

Honorable Mention, International Collegiate Programming Contest, 17th Iran Internet Contest, Sheikhbahaee University, November 28, 2019.

ACADEMIC APPOINTMENTS

UNIVERSITY OF MARYLAND BALTIMORE COUNTY | Research Assistant Baltimore, Maryland | Summer 2023-Present

Investigating the causal connections among potential variables that either cause or impact the utilization of antibiotics and the occurrence of diarrhea in patients experiencing septic shock. (Advisor: Dr. Patricia Ordóñez)

UNIVERSITY OF MARYLAND BALTIMORE COUNTY | Research Assistant Baltimore, Maryland | Fall 2021-Spring 2023

studying regulatory ambiguities and providing means for software companies to have something to show their attempt at compliance. (Advisors: Doctors Aaron Massey and Sreedevi Sampath)

PROJECTS

BIAS IN PREDICTIVE POLICING MACHINES | Independent Study with Dr. Foulds (Since summer 2022)

- Demonstrated the bias caused by feedback loop in Predictive Policing Machines (PPM) by simulating usage of a PPM on Baltimore crime dataset.
- Simulated dispatching of police officers to the PPM's Kernel Density Estimated hot-spots of previous month.

SOFTWARE COMPLIANCE WITH AMBIGUOUS REGULATIONS | Independent Study with Dr. Massey (since Sept. 2021)

- A case study of modeling ambiguities within regulatory texts by software practitioners using grounded truth approach
- An Interview to determine a method for documenting and demonstrating the found connections between regulations' ambiguity models and other software artifacts (e.g. DFDs, ERDs, etc.) by software practitioners

APPLYING LEARNING ALGORITHMS ON PARKINSON PATIENTS' DATASET | Data Mining course project (Jan. 2022-May 2022)

- Accuracy evaluation of supervised machine learning algorithms in predicting Parkinson Disease on a dataset of pre and post diagnosed cases
- Dataset from UCI: It used to exist at the UCI archive (Parkinson Patients Speech Dataset Link), now you can get it from Kaggle website (Kaggle Link)
- Data preprocessing:
  - Data cleaning: removed outliers and null values
  - Feature selection: mRMR to select K best features, Correlation heatmap (before and after feature selection)
  - Normalization: Standard normalization, Min-max normalization
- Learning algorithms applied: Logistic regression, Decision tree, Naive Bayes, SVM (Linear), KNN, MLP, RF
- Evaluation metrics: Accuracy, Recall, F1 score, MCC, Cross validation

THE USAGE OF DRONES IN HELPING THE VISUALLY IMPAIRED PEOPLE | Computational Research Methods course project (Aug. 2021-Dec. 2021)

- Outlined a research project using DJI-Tello drone
- Implemented the first phase of the research during this course.
- Used an object-detection algorithm (SSD) on the footage received from drone's camera
- Analyzed the data gathered, to see if SSD algorithm and the data set used (COCO names) was an acceptable choice or not

EDGE FINDING IN IMAGES | Artificial Intelligence course project (During CS B.S)

- Implemented an Image processing project using MATLAB
- Finding edges in an image
- Method: gray-scaling-> expanding->smoothing->derivation->finding the maximums

WINDOWS APPLICATION | Database course project (During CS B.S)

- Designed and programmed a windows application using C# and a database in phpMyAdmin
- Purpose was to learn how to write/delete/update/read from/to a database

WEBSITE WITH PHP | Internet Engineering course project (During CS B.S)

- Created a website using JavaScript + CSS + HTML for the front-end. PHP for the back-end. SQL server for Database

WEBSITE WITH PYTHON | Self Defined Project

- Created a website using JavaScript + CSS + HTML for the front-end
- Python for the back-end

RESEARCH MENTORING

GRADUATE STUDENTS

Ashutosh Latwala, Information Systems, UMBC 2023

UNDERGRADUATE STUDENTS

Shaniah Reece, Information Systems, UMBC 2022
Leah Prince, Information Systems, UMBC 2023
Adam Baji, Information Systems, UMBC 2023

HIGH-SCHOOL STUDENTS
Gavin Tantleff 2022

EMPLOYMENT

AGRA (ETELAAT GOSTARESH RAHE AYANDE) | Content Creator, Intern Isfahan, Iran | Summer 2017

Provided content for websites created with WordPress.

SELF EMPLOYED | Private tutoring Isfahan, Iran | 2016-2020

Tutored all courses in bachelor of Computer Science curriculum to fellow students

KISH LANGUAGE INSTITUTE | English Teacher Isfahan, Iran | 2012-2016

Taught English classes from level 1 to 4 to adults, two courses per quarter. Gave three 2-hour classes each week per course.

SKILLS

Programming languages: MATLAB, Java, JavaScript, C++, Python, C#, PHP, SQL, R
Spoken languages: English (fluent, written and spoken), Persian (fluent, written and spoken), French (intermediate level, spoken), Arabic (intermediate level, spoken)
Technology: IntelliJIDEA, Visual Studio, Active-HDL, CodeVisionAVR, PyCharm