SAMIN SEMSAR

PhD Student in Information Systems

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EXPERIENCE

Graduate Research Assistant | Information Systems

University of Maryland, Baltimore County

Since summer 2023

- 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)
- Mentoring two undergraduate research assistants
  - Data-analysis with python using Pandas and Matplotlib libraries
  - Reviewing some articles on big time-series data representation methods (e.g. SAX)

Since September 2021

- Co-designed a fundamental exploratory user study to understand software engineers' challenges in implementing regulations
- Redesign and reverse engineering of a web-based tool for modeling ambiguities in regulatory text using JavaScript
- Recruiting participants including software practitioners
- Leading user interview data-collection and analysis

Private Tutor

Self Employed

2016-2020

- Tutored majority of courses in bachelor of Computer Science curriculum to fellow students including
  - Data structure, Algorithms, Databases, Engineering Math, Fundamental Math

SELECTED PROJECTS

- Demonstrated the bias caused by feedback loop in Predictive Policing Machines (PPM) by simulating usage of a PPM on Baltimore crime dataset.Then simulated dispatching of police officers to the PPM's Kernel Density Estimated hot-spots of previous month.
- Calculated causal effect of situational factor, violence of past crime, and race on COMPAS score by first getting a causal graph using PC and GES algorithms and then deciding on the causal inference technique (propensity score and backdoor path)
- Evaluated accuracy of supervised machine learning algorithms in predicting Parkinson Disease on a dataset of pre and post diagnosed cases using python in Jupyter notebooks
- Formulated a model to predict diabetes based on clinical and demographic data using R in R-studio
- Found edges in images using image processing methods including gray-scaling, expanding, smoothing, derivation, and finding maximums
- Implemented an object detection algorithm (SSD) on drones and evaluated its accuracy in detecting outdoor objects

SUMMARY

A passionate and self-motivated graduate student eager to use data-driven methods to inform decisions through deep analysis and compelling visualizations. Strong background in data structures, algorithms, and statistics. **My availability:** May to August, 2024

EDUCATION

Ph.D. in Information Systems

University of Maryland, Baltimore County

Sept 2021 – May 2025

Relevant Courses: Computational Research Method, Quantitative Research Method, Data-Mining, Causal AI, Deep Learning

B.S. in Computer Engineering

Sheikh Bahaee University

September 2016 – August 2020

B.S. in English Translation

Sheikh Bahaee University

September 2008 – August 2012

SKILLS

Programming

Python (NumPy, Pandas, Scikit-Learn, Pytorch)
SQL MySQL R
Javascript C++

Learning Algorithms

Linear and Logistic Regression
Decision Trees
Support Vector Machines (SVM)
K-nearest neighbour

Unsupervised Learning Algorithms

K-means clustering
Decision Trees
Support Vector Machines (SVM)

Ensemble Methods

Bagging
Random Forest
Boosting

Research methods

Qualitative
Quantitative
Computational