Amirali Rayegan

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Computer Science Ph.D. student with expertise in machine learning, software engineering, and optimization. Eager to research on software engineering methods to find cost-efficient solutions for complex challenges.

Work Experience

Graduate Research Assistant , Raleigh-NC , 2024-Now

- Explored dozens of Software Engineering problems using Active Learning for semi-supervised multi-objective optimization.
- Authoring a research paper introducing labeling cost-efficient regression techniques for software optimization under the supervision of Dr. Timm Menzies.

Graduate Teaching Assistant (Software Engineering Course), Raleigh-NC , 2024-Now

- Held weekly office hours and provided one-on-one support for debugging and problem-solving to reinforce course principles and improve student comprehension.
- Graded assignments and exams for 70+ students and offered detailed feedback to enhance understanding and learning.

Undergraduate Research Assistant, Tehran-Iran , 2021-2022

- Conducted research on the impact of Ethereum's transition from PoW to PoS, which served as my bachelor's thesis.
- Applied various machine learning models to predict U.S. stock prices, leading to the publication of the paper "A Comparative Study of Machine Learning Techniques for Stock Price Prediction, 2022."

Head of High School Programming Teachers Team, Tehran-Iran , 2020-2022

- Managed the development of a 3-year Python programming curriculum, equipping over 300 students with basic programming skills.
- Led a team of 10+ educators to create and publish lectures, assignments, and exams, resulting in the establishment of a curriculum adopted by other schools.
- Taught algorithms and Python programming, led coding workshops, and mentored over 250 students, with several securing Python internships at top tech companies, showcasing practical skills gained.

Director of Samcode competitions, Tehran-Iran , 2021-2022

- Led a startup organizing coding competitions for high school students, successfully managing 3 events with over 150 participants each.
- Developed business strategies, secured over $8K in sponsorships, and led a team to deliver real-world programming challenges, fostering strong engagement with the tech community. Ensuring effective communication with stakeholders.

Financial Business Analyst (Consult Your Community, volunteer job), NC State Branch , 2024-Now

- Analyzed transactions for Weird Production, creating cost and revenue stream reports using QuickBooks. Identified optimization opportunities that could reduce costs by 15% and provided several strategic recommendations expected to increase profitability.

Member of "Eco-nance" Sponsorship Team (volunteer job), Tehran-Iran , 2021-2022

- Collaborated with the sponsorship team to secure $4K by negotiating with 7 fintech companies for a student-led event on financial markets and trading.

Skills

Technical Skills	Python (Proficient), SQL (Competent), C++ (Competent)
Libraries	TensorFlow, Keras, PyTorch, Scikit-learn, pandas, NumPy, Matplotlib, Seaborn
Database	MySQL, Elasticsearch, MongoDB, MariaDB, PostgreSQL , Redis, Apache Kafka, Neo4j Database, Kibana
Tools	QuickBooks, Excel, Jupyter Notebook

Education

PhD In Computer Science: North Carolina State University - GPA: 4/4, Raleigh-NC , 2024-Now
BSC In Computer Engineering (IT Major): University of Tehran - GPA: 3.62/4, Tehran-Iran , 2018-2023

Related Projects

Artificial Intelligence : Implemented A-Star and genetic algorithms to optimize pathfinding in obstacle-filled environments.

Customer Sentiment Analysis (NLP): Developed a model with 92% accuracy to analyze feedback for an e-commerce platform.

Predictive Analytics for Stock Prices: Published comparative study analyzing machine learning models for stock price prediction, achieving 85% accuracy.

Neural Network: Designed a model to analyze CT scans, identifying COVID-19 CT-scan cases with over 90% accuracy.

Data Collection & Prediction: Conducted web scraping on a car-selling platform, stored the data in MariaDB, and implemented decision tree-based predictive models to accurately predict car prices.