Saiful Islam Badhon

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Experience

Research Assistant – Computer Science Department

California State University, East Bay   **August 2025 – Present**

- Conducting research on graph-based fraud detection in banking systems modeled as hypernetworks.
- Designed and implemented Graph Neural Network (GNN) models to detect anomalies in large-scale financial transaction data.
- Developed pipelines for graph construction, feature extraction, and anomaly detection, improving detection accuracy compared to baseline methods.
- Collaborated and had weekly meetings with faculty to document results, present findings, and prepare research for potential publication.

Projects

CSUEB Bank Web Application

- Built full-stack banking site using HTML, CSS, JavaScript, Bootstrap, Node.js, Express, PostgreSQL
- Implemented secure user login, registration, and account access with session management
- Designed account management and transaction processing (deposits, withdrawals, transfers, checks, payments) with history logging.
- Developed a responsive, data-driven interface using EJS templates and PostgreSQL integration for real-time account summaries.

Image Classification

- Employed deep learning techniques and neural networks, including TensorFlow, PyTorch, and OpenCV, to create an image classification model.
- Utilized Python and data preprocessing methods to curate a dataset, enhancing my data analysis and manipulation skills and SQL for data organizing.
- Demonstrated proficiency in artificial intelligence and deep learning, resulting in a high-accuracy image classification model capable of identifying objects and patterns within images.

Wage Comparison

- Used a data set from Kaggle to compare the wages from different sectors from the year 2000 to the present date
- Compared wages using the factors of demographics, Union and Non-Union workers, gender, and college education using the SAS programming language
- Presented how the wages varied and their impact on economics using Microsoft PowerPoint in front of 50+ students

Technical Skills

- Technical skills: Python, C++, Java, R, SQL, SAS, Data Structure, Tableau, NumPy, SciPy, Scikit-learn, Power BI, Excel, TensorFlow, OpenCV, Matplotlib, Seaborn, AWS, Google Cloud, Data Visualization, Data Cleaning, Github, KNN, Machine Learning, ETL Tools, MS Office suit, Statistical Analysis, Data Management
- Addition Skills: Leadership, Teamwork, Communication, Problem-solving, Collaboration, Project Management, Public Speaking, Time Management, Decision-making, Adaptability, Critical Thinking

EDUCATION

California State University, East Bay   **Expected Graduation: December 2025**

B.S Computer Science   **GPA: 3.808**

Relevant course work: Data Structure, Calculus I and II, Cyber Security, Software Engineering, Mobile Programming, Web Development, Programming Language Concept, Automata and Computation, Computer Network, Database Architecture, Operating System, Intro to Statistics, Assembly Language, Discrete mathematics