Youssef Elzein
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LinkedIn Github Portfolio

EDUCATION

California State University, **Los Angeles** Aug 2023 - Dec 2024
Master of Science in Computer Science

California State University, **Los Angeles** Aug 2020 - May 2023
Bachelor of Science in Computer Science

Mt. San Antonio College Jan 2017 - May 2020
Associates of Science in Computer Science

TECHNICAL SKILLS

- **Languages**: C++, C, Java, Python, Assembly, HTML, CSS, JavaScript, SQL
- **Software/Frameworks**: Node.js, Vue.js, React.Js, Express.Js, Agile, OOP, Functional Programming, MongoDB, Pandas, scikit-learn, TensorFlow, Keras, Django, Linux, Bash, Docker, Git

WORK EXPERIENCE

- **Cal State Los Angeles: TA** Los Angeles, CA Aug 2023 – Present
  Teaching Associate tasked with teaching students to program in Java using Data structures and algorithm analysis.
- **Raytheon Mentor Protege Program: Data Analyst Intern** Aug 2023 – Dec 2023
  Tasked with creating automatable pipelines to detect, process, and analyze manufacturing defects. Used Keras and TensorFlow to create models to classify defects and accelerate response times.

PROJECTS EXPERIENCE

Automated Manufacturing Defect Detection (Machine Learning) Fall 23
Created a system which analyzes batches of min-displays and classifies any caught defects within them. This tool automated the task of manually classifying these defects to figure out what step of the manufacturing process is failing. I trained multiple convolutional neural networks (CNN's) for different mini-displays on previously classified images. I used image processing methods to expand the training dataset.

Instant Messaging Application (Network Programming) Fall 23
Built a messaging application that utilizes TCP sockets for systems on the same network to communicate. Each system gets to choose which port the application runs on and can see a list of all other connected systems. I implemented Distance Vector Routing Protocol for each system to find the optimal path to all other systems as well. This was done using the NodeJs net and socket libraries.

MoonTrek JPL (Full Stack Web Application) Spring 23
Created a modularized and scalable code base that generates accurate 3D models of the Moon, performs image registration, and overlays Nasa collected data on top of user taken telescope images for the Jet Propulsion Laboratory's Moon Trek Project. Built with MongoDB for the database, VueJs for the client, ExpressJs for the server, OpenCV for image registration, and ThreeJS / WebGL for modeling.

Retail Sales Forecasting (Data Science) Fall 22
Build a system to make predictions for each family of products in all Corporacion Favorita stores (located in Ecuador) given data about historical sales and indicators for Ecuador's economic standing. I trained multiple models such as Linear Regression, 10-Fold Cross Validation with Linear Regression, Decision Tree Regression, and Random Forest Regression and checked their accuracies with Root Mean Squared Error.

Relevant Courses

Data Structures, Cyber Security, Computer Architecture, Discrete Math, Operating Systems, Algorithm Analysis, Web Design, Functional Programing, Technical Writing, Linear Algebra, Databases, Software Engineering, Data Science, Artificial Intelligence, 3D Game Design