Juan Carlos Dominguez - Resume

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Projects

University Database Management System | *Python, Flask, MySQL, JavaScript* **Fall 2024**

- Engineered a relational database schema in MySQL to centralize academic data, supporting over 1000 records across degrees, courses, and instructors while maintaining 100% data integrity.
- Collaborated with a team to design and implement a scalable university database system by developing Flask-based RESTful APIs to connect the MySQL database with a dynamic frontend interface, enabling real-time data management and improving system efficiency by 35%.

Machine Learning Malaria Identifier | *Python, Sci-kit Learn, K-Nearest Neighbors* **Fall 2024**

- Contributed to the project by optimizing the K-Nearest Neighbors classifier through feature scaling, hyperparameter tuning, and data preprocessing, resulting in an improved accuracy from an initial 74% to 92% in classifying cells infected with malaria.
- Conducted rigorous 10-fold cross-validation and tested on diverse malaria cell datasets, ensuring a 20% reduction in false positives and improving generalizability for real-world scenarios.

Fitness Website with AI Chatbot | *Python, JavaScript, Flask, AI Integration* **Summer 2024**

- Optimized database queries through indexing and lazy loading, reducing page load times by 45% and ensuring a seamless user experience.
- Developed and integrated an AI chatbot for real-time user assistance, leading to a 35% reduction in user drop-off rates and a 25% increase in satisfaction scores.

Connect 4 AI | *Python, Jupyter Notebook, Minimax Algorithm, Alpha-Beta Pruning* **Spring 2024**

- Implemented an intelligent agent leveraging advanced AI techniques, including Minimax search and Monte Carlo Tree Search, that achieved a 90% win rate against human players.
- Enhanced the AI agent's move evaluation efficiency through strategic move ordering, reducing computational overhead by 50% and achieving sub-second decision response times.

International Space Station Tracker | *HTML, CSS, JavaScript, Open Notify API* **Winter 2023**

- Integrated and engineered Open Notify API, utilizing HTML, CSS, and JavaScript, resulting in a 25% increase in real-time accuracy of ISS positional data retrieval.
- Automated continuous API updates using scheduled cron jobs, ensuring 99% uptime for real-time ISS position tracking without manual intervention.

Internship Experience

Frontend Developer Intern | *Running Logistics Inc.* **Summer 2024**

- Directed and led a team of 3 frontend developer interns in the planning and implementation of an effective login form, collaborating closely with the backend team to ensure seamless integration.
- Incorporated a responsive and user-friendly login interface that improved user experience and reduced form submission errors by 30%, facilitating smoother interactions for users.
- Consolidated with the backend team to analyze existing data and integrate keyword ranking algorithms, contributing to a 20% increase in the accuracy and relevance of resume matching, which enhanced the efficiency of the resume evaluation process.

Technical Skills

Programming Languages: HTML, CSS, JavaScript, Python, SQL
Technologies/Frameworks: React, Node.js, Git, REST APIs, Pandas, NumPy, TensorFlow, Django
Developer Tools: Visual Studio Code, IntelliJ, GitHub, MySQL Workbench, Jupyter Notebook

Education

- M.S. Computer Science, *Southern Methodist University* Expected Graduation: **May 2026**