

Axel
Martinez

Graduate

Contact

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Portfolio

<https://github.com/Xerrostron>

Skills

C, C++, C#, Java, Python, HTML, CSS, Javascript

Linux/Unix Environments

Visual Studio Code, Jupyter Hub, Amazon Web Services, GitLab. Git, React, Node.js, psycpg2, mongoDB, SQL, django, Azure, .NET, Visual Studio

Adobe Photoshop, Adobe After Effects, Adobe Premiere Pro

Google Docs, Google Slides

Coursework
(Electives)

Databases

Data Science

Operating Systems

Multivariable Calculus

Edge Computing

Machine Learning

Software Development

Computer Science graduate from William & Mary with expertise in Java, HTML, CSS, JavaScript, and Python. Proficient in web development, data science, and database management. Strong problem-solving abilities, effective communication skills, and experience working both independently and in collaborative environments

Education

Bachelor of Science: Computer Science

College of William & Mary, Williamsburg, VA September 2021 - December 2024

Work and Project Experience

Wordle

- Fall 2024 - Student
- Developed in Java with professional coding practices.
 - Emphasized software design principles, including unit testing, debugging, and object-oriented programming (OOP) concepts such as polymorphism, inheritance, and abstract classes. Implemented command-line arguments for configurable game modes.
 - Integrated multiple Wordle variants and designed a basic graphical user interface (GUI) for enhanced user interaction. Utilized GitLab for version control and Eclipse IDE for development.

Quizlet Clone

- March 2025 - April 2025, Independent Project
- Developed RESTful endpoints in .NET to handle flashcard creation, retrieval, and playback features.
 - Integrated a SQLite relational database using Entity Framework for persistent storage of users, sets, and cards.
 - Enabled users to create, edit, and delete flashcard sets, with dynamic front-end rendering for smooth UX.
 - Implemented a flashcard playback system with JavaScript, simulating real-time study sessions.
 - Designed a responsive UI to ensure usability across devices.

Personal Blog

- January 2025 - February 2025, Independent Project
- Engineered a single-page application (SPA) using HTML, CSS, and JavaScript.
 - Implemented dynamic content rendering to minimize full-page reloads. Designed a MongoDB-backed database for account and blog storage. Developed a Node.js backend handling authentication, user account management, and blog creation through a RESTful API with GET and POST requests.
 - Applied secure authentication and session management techniques.

NLP - Sentiment Analysis

- Spring 2023 - Student
- Built a convolutional neural network (CNN) for sentiment analysis of movie reviews. Implemented text preprocessing techniques, including tokenization and stopword removal. Conducted hyperparameter tuning to optimize model performance, achieving 82% accuracy.
 - Utilized Python with TensorFlow/Keras for deep learning model implementation.

Voting Predictions

- Fall 2024 - Student
- Developed predictive models using Python to analyze multicollinear, high-dimensional election datasets. Constructed preprocessing pipelines for scalable data handling. Evaluated classification and regression techniques for U.S. county-level election forecasting. Achieved ~95% accuracy using DecisionTreeRegressor and ~97% accuracy with RandomForestClassifier enhanced by SMOTE for imbalanced data. Leveraged scikit-learn for model implementation and performance evaluation.
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Team Projects

Casino Database

Fall 2024 - Student

- Designed and implemented a relational database for a casino management system using PostgreSQL, psycopg2, and Python in a Linux environment. Ensured schema normalization to Boyce-Codd Normal Form (BCNF) through collaborative entity-relationship (ER) modeling and normalization analysis.
- Developed and executed SQL scripts for data population and integrity constraints. Focused on aligning database structure with real-world casino operations, emphasizing transactional consistency and efficiency.