Alan Leal

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Education

Virginia Commonwealth University   Richmond, VA
Bachelor of Science in Computer Science   *Graduated December 2024*

Work Experience

Software Engineer   *April 2025 – August 2025*
Stealth Startup
- Designed and deployed the primary back-end database for a mobile application using Xano, defining the complete data schema and entity relationships to support core functionalities.
- Implemented a series of RESTful API endpoints with JavaScript and SQL, enabling robust client-server communication and data manipulation.
- Developed key front-end components and user workflows using FlutterFlow (Dart), creating a responsive UI that effectively interfaced with back-end REST APIs to retrieve and display data.
- Refined and standardized a dataset of over 1,000 records through a meticulous data cleaning process, bolstering application performance and data accuracy.

Radio Test Engineer - Intern   *April 2024 - September 2024*
SBP Consulting, LLC
- Analyzed RF signal integrity using proprietary Motorola Solutions software, measuring key metrics like signal strength and bit error rate to validate system performance for public safety use.
- Collaborated effectively in a 4-person specialized team with members from the Richmond Emergency Communications Center and local law enforcement to execute mission-critical system verifications.
- Systematized thousands of test points into a comprehensive database, mapping signal quality across entire facilities to provide actionable data for client-side engineering improvements.

Projects

MediTalk - Real-time, AI-Powered Medical Interpreter (Capstone)   *Fall 2023 - May 2024*
- Architected a full-stack web application, developing a responsive React front-end and a Python/Flask back-end that managed a multi-stage API pipeline for real-time translation.
- Improved translation accuracy by up to 37% by fine-tuning a Helsinki-NLP transformer model on specialized medical dialogues and validating performance with BLEU, METEOR, and BERTScore metrics.
- Conducted rigorous technology evaluation, comparing various speech recognition and translation models to select the optimal stack for performance, scalability, and integration requirements.

arcStar - Discord Music Bot   *September 2025*
- Developed a feature-rich Discord bot with 5+ core playback commands, integrating 3 key technologies including discord.py, yt-dlp, and asyncio for real-time audio streaming.
- Engineered a zero-downtime deployment pipeline using Docker and Render, achieving 99.9% availability on a free hosting tier by implementing a Flask-based health check endpoint pinged at 5-minute intervals.
- Investigated and resolved a critical third-party API integration challenge by researching undocumented authentication behaviors and implementing a secure, credential-passing strategy.

Skills

Programming: Java, Python, C, Flask, JavaScript, SQL, Tailwind CSS, Dart, HTML, CSS, Bash
Software: React, Node.js, REST, Git, SQLite, Docker, Vite, Xano, Flutterflow, Draftbit, Zoho
Language skills: Fluent in English and Spanish