Garrett King

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Education

Western Washington University Bellingham, WA
Bachelor's in Computer Science *Aug. 2018 – Dec. 2023*

Experience

Embedded Control Systems Engineer Jan. 2024 – Present
PACCAR Electronics - Digital Display - Rapid Control Prototyping - C/C++ *Mount Vernon, WA*

- Designed and implemented new functionality in the Digital Display to interface with vehicle systems (VECU, TCM, Engine, Right Hand Stalk) using C/C++/CANalyzer, enabling support for new vehicle configurations.
- Developed software updates to enable real-time State of Charge reporting on the Digital Display while the truck was keyed off, addressing a prior limitation where only the last known charge level was shown. Designed a logic strategy to determine when to display stored vs. live charge data, ensuring accurate readings when transitioning between key-off and charging states.
- Refactored 5,000+ lines of fuel economy code to support Hydrogen Fuel Cell truck platforms, developing a strategy to track cumulative fuel consumption by calculating real-time usage from third-party engine signals. Implemented dynamic calculation methods based on real-time fuel levels and engine states, ensuring accurate reporting across different operating conditions.
- Represented the Digital Display RCP team in regular defect review meetings, establishing new processes to involve developers early in defect investigation. Early team input helped identify correct ownership of issues and led to a 20% reduction in team defects through better initial assessment and communication.

Technical Skills

Languages: C/C++, Dart, Java, JavaScript, SQL
Mobile & UI: Flutter, React Native, Android Studio, Firebase
Embedded Systems: CANalyzer, Real-time Systems, Vehicle Networks
Development Tools: Git, Visual Studio, Azure DevOps
Enterprise Tools: IBM DOORS Next, ALM-QC, Windchill

Projects

Scrambled Egg Mobile App | *Dart, Flutter, Firebase* Dec. 2023 – Present

- Engineered a Flutter/Dart mobile application leveraging Firebase backend and Edamam API integration to deliver personalized recipe recommendations through an intuitive swipe-based interface, implementing real-time data fetching and preference-based filtering algorithms.
- Developed robust JSON parsing and validation to filter API responses based on data completeness, implementing error handling logic for recipe, nutrition, and image fields to ensure high-quality content delivery to users.
- Architected user authentication and profile management system using Firebase, enabling persistent storage of favorite recipes and social sharing functionality.

Smart Buoy Mobile App | *Dart, Flutter, Firebase* Jan. 2023 – Jan. 2024

- Designed an intuitive mobile interface for displaying buoy sensor data, allowing real-time data validation.
- Used Flutter to implement bluetooth connectivity, allowing users to connect to smart buoys via mobile device.
- Built bi-directional data sync between mobile app and web-server, expanding visibility of buoy metrics including location history and authorized users.

Clock Mobile App | *React-Native, JavaScript, Android Studio* May 2023

- Developed an interactive React Native mobile app with dynamic time-based greetings and locale displays utilizing World Time and Quotes APIs.
- Created location-based conditional logic, tailoring app display to user's local time for a customized experience.
- Engineered pop-up animations delivering weather, timezone, and other critical location details on-demand, improving user context.

TCP Client-Server Message Recorder | *C* Feb 2023

- Wrote software in C using TCP/IP and the Sockets API to send messages between client and server.
- Extended server functionality to record messages from client to an ASCII text file with Date-Time stamps and the client's IP address.