

SUMMARY

A well-rounded software developer with experience developing and maintaining embedded software and mobile applications for aerospace and automotive customers. Extensive background in the full life cycle of the software development process including design, development, test, debug, and maintenance.

WORK EXPERIENCE

Lead Software Engineer at Gentex (April 2018 – present)

Lead a team of 5 – 7 engineers designing, implementing, testing, debugging, and maintaining native Android applications, native iOS applications, and Flutter applications, with a focus on iOS. This is a new group within Gentex and is the first group within Gentex to create mobile applications.

- Created a development process that ensure efficient, highly intuitive, reliable mobile applications. This process includes design flow reviews, software design, software development, software testing, software reviews, continuous integration, and continuous delivery.
- Responsible for 1-on-1s, annual reviews, raises, promotions, hiring, and firing within the group.
- Responsible for understanding and quoting new projects and scoping new work.
- Lead the technical development of iOS apps using Swift, and Flutter apps. This team has succeeded in publishing the first Gentex app to the Apple App Store and is working on several more.
 - Work with design teams, product teams, project teams, and test teams to ensure high quality applications.
 - Develop custom interfaces using UIKit, Storyboards, SwiftUI, and Flutter.
 - Implement HTTP communication to REST endpoints on AWS backends and to Gentex rear view mirrors.
 - Implement Core Bluetooth communication to Gentex rear view mirrors.
 - Set up CI/CD. Manage XCode configuration, Apple Developer Accounts, Apple Enterprise Developer Accounts, certificates, provisioning profiles, and devices.
 - Create and distribute prototype/demonstration apps including:
 - GPS & Google Maps functionality
 - Streaming video over RTSP & HTTP
 - iOS Core Bluetooth Central and Peripheral functionality
 - Accessing and modifying Photos in iOS
 - Programmatically controlling WiFi connection and disconnection
 - iOS AWS SDK integration

Embedded Software Engineer at Gentex (May 2012 – April 2018)

Design, implement, test, debug, and maintain embedded software for several rear view mirror products and OEMs.

- Wrote embedded C/assembly software that is running in millions of vehicles.
- Followed processes involving requirements reviews, software design, software development, software testing, software reviews, continuous integration, and continuous delivery.
- Developed and debugged extensively on many microcontrollers, including ARM Cortex M0, ARM Cortex M4, and ARM Cortex A9.
- Developed and maintained ADC, GPIO, I2C, UART, SPI, ethernet, watchdog, and other drivers.
- Integrated CAN communication, electrochromic dimming, lane departure warning, lane keep assist, traffic sign recognition, SmartBeam, rear camera display, and TCP/IP software libraries into customer projects.
- Participated in the development of an OSEK compliant RTOS, developed for internal projects.
- Developed several bootloaders, including for an ARM Cortex A9 SoC that had to support both FPGA fabric and the ARM Cortex A9.
- Developed specifications and software to support customer specific CAN diagnostics.
- Develop prototype iOS apps using Swift.

Software Project Manager at Gentex (March 2011 – May 2012)

Manage the requirements, development, and test phases of embedded software for several rear view mirror

products and OEMs.

- Worked with Opel, Jaguar, Land Rover, GM, and Nissan on Rear Camera Display and SmartBeam projects. Travelled to Japan, UK, and Mexico to support these activities.

Faculty at Calvin College (2010)

- Taught a Circuits Analysis and Electronics lab.

Technical Lead / Project Manager at DornerWorks (September 2008 – March 2011)

Manage the requirements, development, and test phases of embedded software for several products and OEMs.

- Led a team of up to 16 people working on GE Aviation's Software Common Operating Environment.
 - DO-178B Tool Qualification
 - DO-178B Problem Report Verification
 - DO-178B Structural Coverage Analysis of C code, Source to Object Analysis of C and Ada code, and Requirements Based Testing, focusing on the AFDX Ethernet Driver, Board Support Package, File System, and Health Monitor of the VxWorks Operating System.
- Led a team of up to 5 people doing requirements, development, and testing of software for Gentex' dimmable aircraft windows.

Embedded Systems Engineer at DornerWorks (April 2006 – September 2008)

Design, implement, test, debug, and maintain embedded software.

- Developed a DO-178B Board Support package for the VxWorks Operating System of GE Aviation's Software Common Operating Environment.
- Developed the hardware and software for an electronic fan speed controller and wireless remote control.

Intern at Smiths Industries Aerospace (now GE Aviation) (March 2005 – March 2006)

- Used C, National Instruments TestStand, and LabWindows to write test software.

Education

Bachelor of Science in Computer Science

Florida State University: 2012 – 2015

Master of Science in Electrical and Computer Engineering – Digital and Computer Systems

Grand Valley State University: December 2010

Outstanding Graduate Student in Engineering, 2010

Bachelor of Science in Electrical and Computer Engineering

Minor in Mathematics

Calvin College: May 2006