Richard Schupbach

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HIGHLIGHTS

Engineering Leadership

- *Demonstrated ability to lead design teams on successful projects, overcoming aggressive objectives and tight deadlines*

Extensive Experience as a Design Engineer

- *History of successful product launches in the automotive space, from autonomous driving to engine and body controls*
- *History of delivering advanced software for global applications in multiple domains, powering millions of vehicles*

SKILLS

AI Proficiencies - *Gemini (subscribed), ChatGPT (subscribed), Claude*
Programming Languages - *C, C++, MATLAB, Python, Swift*
Backend - *Docker, Jenkins, PostgreSQL*
Cloud - *AWS (S3, ECR, Lambda, Batch, CloudWatch, API Gateway, EC2)*
Frontend - *HTML, PyQt5*
Protocols - *CAN, CAN FD, RS-232, RS-485, SPI, TCP*
Automotive File Formats - *A2L, BLF, CDF, XCP*
Tools - *Bitbucket, CANoe, CANalyzer, CarDAQ, Confluence, debuggers, ETAS, Git, Github, Hardware-in-the-loop (dSpace HiL), In-circuit emulators, INCA, Jira, Lauterbach, MDA, NeoVI, PyCharm IDE, Oscilloscopes, VS Code IDE*
Other - *Algorithm development, AUTOSAR, AUTOSAR OS, Embedded software design, OSEK, Simulink*

EXPERIENCE

Static Controls Corporation - *Wixom, MI*
Vice President, Engineering
MAY 2024 - PRESENT

- Launched AVoIP product line
- Launched ESP32 Display Matrix product line
- Launched USB Audio product line
- Led effort to refresh flagship product, resulting in 60% unit cost savings

Dynamic Map Platform - *Livonia, MI*

Software Team Lead

AUG 2022 - MAY 2024

- Led AWS cloud and software tool development
- Owned AWS data lake pipeline and ingest software
- Owned software tool development for geospatial data acquisition
- Managed map expansion to new regions (Japan, Kuwait, UAE, Oman) in support of General Motors SuperCruise

YAZAKI Yazaki North America - *Canton, MI*

Senior Embedded Software Engineer

APR 2022 - AUG 2022

- Designed embedded software for On-board charging (OBC) of the Stellantis Battery Electric Vehicle (BEV)

MathWorks - *Novi, MI*

Senior Software Engineer, LiDAR Connectivity

APR 2019 - JAN 2022

- Owned key component (OSIsoft PI) of successful new product launch
- Launched support of advanced Velodyne LiDAR sensors
- Designed software to support automotive file formats (A2L/BLF/CDF) and protocols (CAN/CAN FD/UDP/XCP) in Vehicle Network Toolbox

General Motors - *Milford, MI*

Software Architect, ADAS and Autonomous Driving

AUG 2017 - FEB 2019

- Developed MATLAB and Simulink models
- Member of architectural design team responsible for SuperCruise
- Optimized modularity and reusability in the areas of Sensor Fusion, Longitudinal Execution, Lateral Execution, and Vehicle Path

General Motors - *Warren and Milford, MI*

Senior Algorithm Design Engineer, Global Propulsion Systems

JUN 2005 - AUG 2017

- Developed algorithms & software for GM powertrain control modules, primarily related to engine position sensing
- Held various senior level design positions, in engine controls, body controls, and infrastructure software
- Created requirements of supplier software (HAL/MCAL/BSP/HWIO)
- Designed and developed software for the middleware (infrastructure), used as interaction layer between application software and HAL
- Owned bootloader and memory manager

EDUCATION

Rackham Graduate School
Master of Science, Electrical Engineering *(MSE EE) 2007*
University of Michigan - Dearborn
Dearborn, MI

Bachelor of Science, Electrical Engineering *(BS EE) 1997*
Lawrence Technological University
Southfield, MI

TECHNICAL PROJECTS

My experience spans embedded, mobile and desktop applications. I make mostly proprietary software. Works not restricted by non-disclosure agreements are available at my GitHub links below.

Each project below links to a detailed description, at my website.

1. CPU State-of-Health Monitoring Software for ECU (General Motors) - *GM Patent: US 8352791 B2*
2. Boot Swap Utility (General Motors) GitHub
3. Trig Functions (General Motors) GitHub
4. Velodyne LiDAR Sensor Support (MathWorks)
5. Audio Synthesizer (SCC) GitHub
6. Mobile App Development (Personal, SCC)
7. Image Viewer Python App (Dynamic Map Platform) GitHub
8. ESP32 LED Matrix Driver (SCC)
9. Product Refresh Using Raspberry Pi (SCC)
10. USB Audio (SCC)
11. Open Source Arduino Audio (SCC)
12. AVoIP Video Wall (SCC)