Josh Oberhaus

Software Engineer

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With nine years specializing in Driver Assistance, I bring expertise in Radar-based tracking and fusion, alongside a diverse skill set developed from a total of 15 years in the automotive industry. Committed to ongoing learning while also empowering colleagues; I have revamped visualization tools, introduced two generations of tracking KPI tools, and conducted various training sessions on perception and fusion - all to make working on tracking more accessible and enjoyable. I am strong team player, as demonstrated by leading critical customer meetings and stepping into the role of Product Owner as needed. I am eager to contribute to a new team!

Experience

Robert Bosch LLC

Hybrid | Plymouth, MI

Technical Expert - Perception | Tracking — *Jan. 2024 - Present*
Senior Software Engineer - Perception | Tracking — *Sep. 2018 - Jan. 2024*

- Served as a technical lead for a global Perception / Tracking software team.
- Secured a strategic acquistion through realizing tracking gains brought by architectural changes for a 5 radar 1 video configuration.
- Optimized radar-based perception for a new generation of radar sensor.
- Developed several new features for MATLAB-based tracking visualization tooling, including projection of the components of the Kalman filter, and automation abilities.
- Coordinated with cross-functional software teams and management to determine long term planning of software content and integration strategies.
- Supported and led critical customer demos and meetings, even outside of my main area of expertise.
- Acted as Product Owner for an Agile System-of-Systems team.
- Developed Python-based KPI Tool for single target tracking analysis, integrated and automated its execution as a Jenkins pipeline.
- Increased performance of corner radar-based tracking (C++) by identifying and addressing assumptions made towards front-facing radars.
- Reworked object type classification feature calculations to be more agnostic of sensor-mounting, reducing missed-target scenarios.
- Facilitated first deployment of tracking code on a new ECU, with a new middleware.
- Adapted MATLAB-based object type classifier training tool for corner use-cases.
- Tripled Jenkins simulation throughput through determining bottleneck in execution.

Bosch Engineering North America

Farmington Hills, MI

Software Engineer - Predictive Safety Systems — *Apr. 2016 - Sep. 2018*

- Served as the Predictive Safety System (AEB, FCW, System Conditioning) Component Responsible for a strategic customer.
- Developed Python-based data mining tools to open new opportunities in evaluating data sets from endurance runs.
- Introduced automated tooling to enable customer-friendly overviews for endurance run points of interest.
- Led labelling sessions with the customer, explaining and addressing concerns with any activations.

Software Engineer — *Apr. 2012 - Apr. 2016*

- Developed unique solution for criticality classification for marine radar collision warning applications, modified tracking and localization logic to be less dependent on traffic scenes.
- Designed and implemented Python-based code generation tool chain to allow a Bosch-created library to be integrated into a third-party controller.
- Served as diagnostic Component Responsible and integrator in Electronic Power Steering (EPS) and EBCM projects.
- Led a global diagnostic communication software development team, coordinating tasks and workloads.
- Created an ABS simulation software (C-based) and testing client (in CANAPE/CAPL) for OEM brake component testing, greatly reducing the OEM endurance run effort.
- Integrated ASIL-D control functions in EPS unit, to facilitate level three functions, the first for that product generation.
- Identified and documented previously unknown errata in Bosch-provided tool chain, and in a third-party provide compiler.
- Reduced EBCM software-release effort through automations and improvements made to tools.
- Integrated a third-party Simulink model into a Electronic Brake Control Module (EBCM), the first such integration for that generation of product.
- Coached student team through the development of a mobile app to allow easy reflashing and retuning of EBCMs.

Bendix Commercial Vehicle Systems

Elyria, OH

Co-op Software Engineer — *Apr. 2010 - Jan. 2012*

- Rewrote Diagnostic Testing Client (delivered to all customers) in C#, adding support for UDS.
- Implemented low-cost automated HIL bench for system integration testing.

Skills

Programming C++, Python, MATLAB, C, Julia
Middleware Automotive Operating System (AOS), ROS

Education

Kettering University *Flint, MI*

B.S. in Computer Engineering, Summa Cum Laude *2012*

Certificates

2023 **Deep Learning Specialization**, Coursera

2024 **Sensor Fusion and Non-linear Filtering for Automotive Systems**, ChalmersX

2025 **Multi-Object Tracking for Automotive Systems**, ChalmersX