Andrew G. Gurik

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Ag Leader Technology 2018 - present

Staff Software Engineer 2023 - present

- Lead a software engineering team to create the next generation of in-cab precision agriculture displays. Specifically, inventing a new 3D geospatial mapping engine and UI using Qt3D and OpenGL, as well as general application improvements in an embedded linux environment.

Senior Software Engineer 2021 - 2023

- Work on a Scrum team in a leadership role to design and maintain software for precision agriculture in-cab display and embedded modules connected on a CAN bus (J1939).
- Created aftermarket precision nozzle-by-nozzle liquid application spraying system. This includes designing touch screen UI, CAN messaging protocol, embedded architecture, and PID control systems.
- Leading a newly formed Scrum team in creating a next-generation precision agriculture product.

Software Engineer 2018 - 2021

- Work on a Scrum team to design and maintain software for precision agriculture in-cab display and embedded modules connected on a CAN bus (J1939 & ISOBUS).
- Created an aftermarket precision high-speed planting system.
- Maintained existing product lines for planter downforce, ISOBUS dry spreader, etc.

Randstad Technologies 2017 - 2018

Software Engineer – (Caterpillar) Core Machine Software

- Continue the previous role with Caterpillar developing the new Virtual Platform ecosystem.
- Create Simulink, python, C#, and C++ tools to enable engineers to interact with the Virtual Platform ecosystem.
- Write high level tests for use across multiple applications within machine software.
- Implement a Google Test infrastructure for application-layer automated testing.

Caterpillar, Inc. 2013 - 2016

Software Engineer

Core Machine Software

- Create simulation of transmission control software in a Windows environment for development, testing, and machine performance analysis.
- Expand the scope of the simulation environment from transmission controls to the machine application layer.
- Design architecture to generically support hundreds of top-layer applications across all Caterpillar product lines.
- Create Simulink, python, C#, and C++ tools to enable engineers to interact with this simulation environment.
- Create Google Test infrastructure for high-level automated testing.
- Integrate a virtual CAN Bus into the simulation.

Drivetrain Systems & Software - Large Mining Trucks, Quarry and Construction Trucks

- Create features for embedded software controlling hydraulic clutches in automatic transmissions for mining trucks.
- Work within multiple large codebases composed of both C and Simulink code on embedded systems communication using J1939.
- Learn under experienced Application Lead to implement features in current production and new products.
- Participate in migration from Clearcase to Git & Ivy source control.
- Application Lead for new Quarry and Construction Trucks projects.
- Facilitate communication between various testing and development teams located around the world.
- Create innovative workflows using simulation and software-in-loop testing.

Education

B.S. Electrical Engineering Iowa State University 2012

Software and Tools

- C++, C, OpenGL, QML, Qt Framework, Qt3D, GTest, gcc, CMake
- GIT, Perforce