Andrew G. Gurik

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Core Competencies

C++	**CAN/J1939/ISOBUS**	**Technical Leadership**
C	**Qt Framework**	**GNU/Linux**
GCC/CMake	**Qt Widgets**	**Robotics**
Embedded Systems	**QML**	**PID Control**
Software Design	**OpenGL/Qt3D**	**Computer Vision**
Precision Agriculture	**Simulink/Matlab**	**Git/Perforce**

Experience

Ag Leader Technology — **2018 - present**

Staff Software Engineer — *2023 - present*

- Lead development of next-generation precision agriculture displays, implementing advanced **3D geospatial mapping engine** using **Qt3D** and **OpenGL** in an **embedded Linux** environment
- Architect and implement automated grain cart alignment system using **computer vision** (**VPI AprilTag**) on **NVIDIA Jetson Orin Nano SOM**
- Drive technical direction and mentor team members in modern **C++**, **embedded systems**, and **real-time graphics**

Senior Software Engineer — *2021 - 2023*

- Led Scrum team developing precision agriculture software for in-cab displays and **CAN bus** (**J1939**) connected modules
- Designed and implemented precision nozzle-control spraying system, including touch UI, **CAN protocol**, **embedded architecture**, and **PID control systems**
- Spearheaded next-generation product development, focusing on **real-time performance** and **user experience**

Software Engineer — *2018 - 2021*

- Developed software for precision agriculture displays using **Qt/QML** and **C++** with **CAN bus** (**J1939** & **ISOBUS**)
- Created high-speed planting system with real-time control and monitoring
- Maintained critical systems including planter downforce and ISOBUS dry spreader

Randstad Technologies — **2017 - 2018**

Software Engineer — – (Caterpillar) Core Machine Software

- Enhanced Virtual Platform ecosystem with **Simulink**, **Python**, **C#**, and **C++** tooling

- Implemented **Google Test** infrastructure for automated testing
- Developed cross-application testing framework for machine software validation

Caterpillar, Inc. **2013 - 2016**

Software Engineer

Core Machine Software

- Developed Windows-based transmission control simulation environment
- Designed scalable architecture supporting hundreds of applications across product lines
- Integrated virtual **CAN Bus** simulation with comprehensive testing framework

Drivetrain Systems & Software - Large Mining Trucks

- Led development of embedded control systems for hydraulic transmissions
- Managed global development teams and implemented **CI/CD** practices
- Pioneered simulation and software-in-loop testing methodologies

Education

B.S. Electrical Engineering Iowa State University, 2012