Nicole Swierstra

Electrical Engineering Student, experienced in design, firmware, and software development of integrated circuits

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Relevant Skills

Embedded/Firmware programming: ARM/RISCV assembly, c (CMSIS, ChibiOS, FreeRTOS)
Application-side programming: c (Win32), c++ (QT, open-GL), c#, java, python
Design & Simulation: Altium, Fusion360, python, CATIA, SolidWorks, Excel

Education

Western Washington University (2022 -)

Projects & Applied Experience

Formula SAE:

- V66 VCU OS - created a very lightweight RTOS with CMSIS and used it to interpret input and sensors and control an electric car on an STM microcontroller
- V67 VCU Design - design of an Asymmetrical Linux/RTOS controller in Altium, using an already available NXP SoM to safe on manufacturing costs.
- V66 BMS Revitalization - fixing V66's BMS to the point where it becomes drivable again after it broke over the summer.
- Autocross Lap Simulation - Python simulator that takes in vehicle parameters and gives an estimate on how well it would perform around an FSAE autocross track, using a LaGrange cost optimization

Autosport Labs:

- Conversion Module - Writing and Integrating a python module that converts aim, motec, and vbox files into Autosport Labs proprietary format
- PointX firmware - Writing firmware using Chibi-OS that takes data from a gps module

Personal:

- V66 dashboard - Started as a part of the V66 car, turned into a project to validate and test my own PCB design

More information on projects can be found in the portfolio page of my website

Organizations & Employment

Autosport Labs (spring 2024 -)

Worked on a few assorted projects when I had the time in between school and FSAE

Formula SAE (fall 2023 -)

2023/2024 year - Electronics general member
2024/2025 year - Much busier electronics general member

Many, many assorted projects over the course of a year.