Ethan.**Campbell**

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/*———————— Master's student specializing in machine learning and embedded systems ————————*/

//Experience - Internships

MILWAUKEE TOOL; Firmware Engineering; Summer 2021

[0] Developed a firmware analysis tool to extract run time data without compiling source or deploying firmware executables. Deployed into CI/CD pipeline for seamless integration with firmware development. [PYTHON]

[1] Developed a circular buffer firmware module and driver for infinite data logging and retrieval to an eternal flash SPI IC. Extensibility and modularity primary factors for design. [C]

GARMIN; Software Engineering; Summer 2019

[0] Developed and deployed Software Quality tools, which improved workflow and efficiency of global teams. Central management & analysis with networked background watchers on test benches. See **Projects[2]**
[C# , .NET , WMI]

APTIV; Systems Engineering; Summer 2018

[0] Root cause failure analysis for automotive systems, which progressed the development of new products.

[1] Evaluated CAN protocol communication and improved errant equipment behavior, which resulted in faster product validation methods. [CAN]

DELPHI; Production Control and Logistics; Summer 2017

[0] Developed factory information dashboard, which resulted in better inventory and production management.
[JAVA, APACHE, BOOTSTRAP]

//Education : Purdue University

May 2021; Bachelor's - Computer Engineering

[0] 3.7 GPA | Eta Kappa Nu (HKN) : IEEE Honor Society –> Operations Director - Executive

[1] UTA ECE 404 Computer Security | 14 hr/wk | instructed and debugged python

May 2023; Master's - Electrical and Computer Engineering

[0] GTA ECE 463 Computer Networks | 20 hr/wk | course coordination, UTA supervision, office hours

//Skills

[0] C & C++ [ARM Firmware, Computer Vision, SQ Network Monitoring App, Lightweight Web Server, RTOS]
Frameworks –> [OpenCV, QT, CUDA, libArgus]

[1] Python [Deep Learning, ML, Firmware Source Analytics, Network Applications, Image Processing App]
Frameworks –> [Scikit, Numpy, PyTorch, Keras, OpenCV, PyQT]

[2] Java & C# [Web Server + Dashboard Interface, Micro C Compiler]
Frameworks –> [Apache, Boostrap CSS, Ajax, WMI, .NET]

//Projects

[0] **SENIOR DESIGN**: Software Lead. Developed Computer Vision system for Autonomous Pollination Drone. Used Nvidia Jetson Nano SBC and OpenCV C++ . Optimized with libArgus & CUDA . Wrote UART based communication protocol for inter-chip communication layer. Developed low-latency drone camera network stream. site

[1] **MIRCROPROCESSOR OS**: Wrote and implemented a low-level custom operating system written in embedded C . Utilized micro peripherals to allow for keyboard input via PS/2 legacy protocol for keyboards.

[2] **SQ APPLICATION**: Network application in C# . Nodes on test SQ servers report to central server with diagnostics: temp, cpu, memory, storage, software versions, status, etc. Used .NET and WMI.