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Experience

- **INFICON** — Syracuse, NY
  Software Engineering Team Lead — *February 2021 - Present*
  - **Lead**: Technical lead and mentor for a team of 2-5 junior software engineers.
  - **Technical Screening**: Responsible for technical screenings for potential software & embedded engineer hires.
  - **Intern Mentor**: Served as a mentor for summer software engineering interns.
- **INFICON** — Syracuse, NY
  Software Engineer — *October 2018 - Present*
  - **Full Stack**: Full-stack responsibilities ranging from front-end web development to bare-metal assembly code, and everything in between. Custom Linux kernel modules, board bring-up, multi-threaded application level programs, custom network layers on top of TCP/IP, and FPGA interfacing.
  - **Kernel TTY Line Discipline**: Implemented a TTY line discipline kernel-mode driver, allowing a custom serial protocol to be used over any TTY. C, Linux.
  - **Kernel Char Device Driver**: Implemented a kernel-mode char driver for communication to a DSP chip memory mapped to the kernel through an FPGA. C, Linux.
  - **FPGA Memory Map over HTTP**: Wrote a web server that exposes FPGA's memory map as addressable over HTTP. C++, Linux
  - **FPGA Programming Library**: Wrote a platform agnostic library for programming Intel and Xilinx FPGAs over USB by bit-banging the FPGA bitstream image over the FPGA's passive serial interface. C++, Linux, Windows, LibUSB, LibFTDI.
  - **Legacy Porting**: Lead a successful effort to port a 650kLOC project from C++98 to C++17.
  - **GUI Programming**: Wrote customer-facing and internal tooling GUIs using a variety of different technologies. Electron (JS, HTML, CSS), wxWidgets (C++, Python), .NET WPF (C#).
  - **Yocto**: Wrote Yocto BSPs and recipes for embedded Linux deployments on x86 and ARM boards.
- **KGB AVIATION SOLUTIONS, LLC.** — West Seneca, NY
  Student Embedded Engineer — *January 2018 - May 2018*
  - **FDR Interfacing Tool**: Worked with the company CEO and several other interns to build an interfacing system for flight data recorders (FDRs).
  - **Reverse Engineering**: Sniffed an RS-422 bus to determine propriety hand-shaking serial packets.
  - **FTDI**: Interfaced to a FTDI USB to serial chip from a Pine64 SBC to mock hand-shaking signals to flight data recorders, allowing data extraction. Concurrently update a GUI over MIPI DSI.
  - **Shipped Product**: Managed to take an idea from the planning stages and progress to a tangible, secure, shippable embedded system in four months time.

Programming & Tooling

- **Languages**: C++, C, Python, JavaScript, VHDL, x86 and ARM assembly.
- **Tools & Frameworks**: GNU tools, CMake, git, Yocto, Visual Studio, Atmel Studio, Vivado
- **OS/Platforms**: Linux, Windows, FreeRTOS, Bare-metal.
- **Hardware**: Comfortable reading schematics & using oscilloscopes, logic analyzers, multi-meters, etc.

Education

- **University at Buffalo, School of Engineering** — Buffalo, NY
  Bachelor of Science, Computer Engineering — *Awarded September 2018*
- **Linux Foundation** — Syracuse, NY
  Linux Foundation Certified Engineer - Linux Kernel Internals — *Awarded December 2019*