

# Arrington Long

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(+08076)25-3622

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## Objective

Enthusiastic professional seeking a position where I can bring my experience in embedded engineering to a professional environment and improve industry tools and processes.

## Experience

- **RAM-Resident Pocket Camera Software (October 2023-present)**
  - Provided enthusiasts an enhanced photography experience without requiring the extensive hardware modifications of previous solutions.
  - Reverse-engineered Game Boy code to find additional entrypoints for arbitrary code execution
  - Interfaced with a legacy CMOS image sensor in a Z80-like Assembly language.
- **BlueRetro Dreamcast Memory Card Support (Summer 2023)**
  - Implemented support for a new peripheral in a complex, multithreaded embedded (ESP32) C/C++ codebase.
  - Saved ~1KB of instruction RAM
- **Dreamcast Memory Card Interface (2022)**
  - Bit-banged a proprietary serial protocol to develop a drop-in replacement for an AVR-based memory card reader/writer which communicates over UART.
- **Home Solar Battery Monitor (2018-2019)**
  - Responsible for the WiFi/Bluetooth configuration interfaces and the networked sensor-reporting system on an ESP32-based lead-acid battery monitor.
- **Robotic Car (2017)**
  - Developed a robotic car which could follow lines and execute movement patterns using TI's MSP430 microcontroller and custom hardware.
- **NOC Technician (2015/2016) (Infranet Technologies Group)**
  - Ensured availability of internal and customer systems.
  - Organized internal documentation into a standard format
  - Assisted customers in troubleshooting.

## Skills

- Computer Languages:
  - *Proficient:* C, Java, Python, Z80 Assembly
  - *Learning:* Haskell, Golang

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- Natural Languages:
  - English
  - Intermediate Japanese (3 years of study, JLPT N3)
- Verilog HDL and FPGA tooling (Intel Quartus)
- General Tools: Git, Make, Radare, Ghidra, KiCAD

## Education

**North Carolina State University -- May 2019**

*Bachelors in Computer Engineering*