

***Embedded Systems Software Engineer with 6 years professional experience working on IoT consumer devices.***

## HARDWARE AND SOFTWARE COMPETENCIES

Technical:	ARM (ST, NXP) Firmware Development, Sensor Integration, Timers and Hardware Interrupts, FreeRTOS, Bluetooth LE, I2C, SPI, UART, TCP/IP, Actuators and Motor Control
Languages:	C /C++ (Primary, 12yr), Python (5yr), ARM Assembly (2yr), LabVIEW (2yr), MATLAB (1yr)
Software:	Linux (9yr), Git, Jira, GDB, ADB, Make, GNU ARM toolchain, STM32CubeMX (2y), NXP Kinetis (2yr), Keil (1yr), Altium (1yr), Eagle (7yr)
Test Equipment:	Soldering (12yr), Oscilloscopes (9yr), JTAG / SWD debugging (4yr), Multimeters, Logic Analyzers

## PROFESSIONAL EXPERIENCE

**Miku Inc (Commercial)** Woodbridge, NJ  
Software Engineer, Embedded

**Oct 2017 - Present**

Part of the core engineering team at a startup (formerly known as EGW Technologies) which has brought to market multiple generations of an IoT smart baby monitor camera with contactless breathing rate detection capabilities. My role largely uses C/C++ in a multithreaded embedded Yocto Linux environment.

*Miku Original (Version 1)*

- NightVision mode, Two-way-Talk, Music and White Noise playback feature design + implementation (gststreamer)
- Helped perform camera hardware component configuration for camera light sensor, IR LEDs, speakers and microphone

*Miku Pro (Version 2)*

- Fully responsible for Pairing-Mode design and flow and its camera-side software implementation (BLE / WiFi)
- Developed and implemented camera-based room ambiance audio capture process (gststreamer)
- Developed 3PL returns triage process and wrote python-based software and GUI for non-technical 3PL warehouse staff to use for mass-updating of cameras.
- Co-inventor on patent application for illness detection methodology (US20200390339A1, pending)

*Unannounced Product*

Configured an STM32H743 using STM32CubeMX to evaluate the runtime of FFTs as part of chip evaluation for a future product

**Persistent Systems, LLC (Defense / Commercial)** New York, NY  
Software Engineering Intern, Embedded

**May 2016-Sept. 2016**

- Performed board bring-up, chip configuration, HW/SW debugging, schematic review, and wrote documentation for an NXP ARM Cortex-M based HDMI to MyDP peripheral for the company flagship MPU5 Android military radio platform.
- Ported 40,000+ lines of 8-bit 8051 C code to run on a pin compatible 32-bit NXP / Freescale ARM microprocessor using Kinetis.
- Cross-compiled NXP x86 bootloader utilities for an ARM-Linux kernel and created 'auto-upgrade FW on cable-detect' feature for MPU5 radio.

**American Jewish World Service (Non-Profit)** New York, NY  
Administrative Coordinator, Development Department

**March 2007-July 2013**

- 6 years as administrative project coordinator supporting 19+ fundraising department employees.
- 4 years as department steward (projecting/reporting) of a \$2.1 million-dollar departmental budget.
- Created Python targeting software for fundraising team returning median household income data given a target zip code and radius.

**OTHER EXPERIENCE:** Best Buy, NYC (2005-07) | Footlight Records, NYC (2003-05) | Actor / Improv Performer, NYC (2000-07)

## EDUCATION

### NEW YORK UNIVERSITY | *Tandon School of Engineering*

Dual Degree B.S. in Electrical and Computer Engineering  
May 2017

#### RELEVANT COURSEWORK:

Real Time Embedded Systems ( <i>Grad.</i> )	Artificial Intelligence ( <i>Grad.</i> )	Sensor-Based Robotics ( <i>Grad.</i> )
Circuits I, II, & Electronics I	Data Structures and Algorithms	Feedback Control

**PRIOR EDUCATION:** City University of New York, (2014) | The New Actors Workshop, NY (2002) | Valencia College, FL (2000)

## LEADERSHIP AND TECHNICAL PROJECTS

**Camelot AI: A 5 DOF Robotic Manipulator and Camelot game playing Artificial Intelligence Engine** <http://github.com/EasonNYC/Camelot>

- Written in Python. Themed after the sentient computer 'HAL' from "2001: A Space Odyssey."
- Created an AI agent which controls a robotic arm to move pieces on a game board. Compatible with VREP Robotics Simulation environment.
- Implements Iterative Deepening, Alpha-beta Pruning, and partial Move Ordering.

**Embedded Systems Engineer for NYU CubeSAT 2016-2017** <https://github.com/EasonNYC/NYUSat>

- Worked on the payload module for a 1U-sized mini satellite collecting weather science data.
- SW: Used FreeRTOS and STM32CubeMX to synchronize low level sensor device drivers with on-chip peripherals on an STM32 F3.
- HW: Performed Schematic Capture and PCB design in Altium Designer. Tested and simulated mixed signal sub-circuits using LTSpice.

**Project Manager of NYU 2014-2015 NASA Robotics Competition Team** <http://www.easonrobotics.com/?portfolio=nasa-lunar-mining-robot>

- Captain and Project Manager to 13 BS and MS students in a year-long NASA sponsored autonomous lunar robot design project.
- Created robot Wi-Fi communications link watchdog timer safety feature with auto reconnect ability on TCP/IP connection dropouts.
- Misc. contributions include: Team budget, recruitment, Sensor Test / R&D, Electrical Layout, LabVIEW Teleop+GUI programming.

**ARM Cortex-M4 Low Level Device Driver for the Bosch BMP085 Pressure Sensor** <https://github.com/EasonNYC/BMP085>

- I2C based firmware for STM32F407 utilizing the BMP's EOC pin to an external interrupt for faster data acquisition rates.

*(Proof of Covid-19 Vaccination available upon request)*