Alex **Parisi**

· Software Engineer ·

NYC Metropolitan Area

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Work Experience

Mikucare *Woodbridge, NJ / Hybrid*

DSP Software Engineer | C++, Python, SQL *Mar. 2022 - Present*

- Member of a team of engineers responsible for developing high throughput and low latency C++17 code for a smart baby monitor.
- Leading the development of new algorithm features utilizing sensor fusion and computer vision techniques to identify the sleep, respiration, and movement patterns of over 30,000 infants in a fast-paced startup environment.
- Designed a multi-threaded and highly-scalable analysis model that processed over a terabyte of customer data to verify algorithm performance and evaluate the statistics of the radar and camera sensors for the development of new features.
- Analyzed the accuracy and performance of seizure and heartbeat detection algorithms in Python and debugged customer issues.
- Collaborating with other engineers, product managers, and stakeholders to understand requirements and deliver cutting-edge, high-quality software solutions utilizing software best practices and an Agile methodology.

Peraton Labs *Picatinny Arsenal, NJ / Hybrid*

Software Engineer | C++, Python, Matlab *Nov. 2019 - Mar. 2022*

- Member of an Agile team of engineers responsible for developing and maintaining the real-time object tracking and trajectory estimation software for a Counter-Unmanned-Aircraft-System (C-UAS) program at the US Army CCDC-AC: Weapons and Software Engineering Center in C++17.
- Collaborated with large teams composed of industry experts to deliver high-performance and high-throughput software running on a custom Linux kernel, which interacts with several other systems and a proprietary weapons platform.

Crestron Electronics *Rockleigh, NJ*

Firmware Engineer | C, Matlab *Jan. 2018 - Nov. 2019*

- Wrote and interacted with bare-metal and Real-Time-Operating-System (RTOS) C firmware, specifically relating to audio processing algorithms like line/acoustic echo cancellation, delay-and-sum beamformers, and fixed/adaptive filter design.
- Modeled algorithms and product design feasibility in MATLAB, and participated in the full cycle of product development for the UC-SB1-CAM soundbar, one of Crestron's best-selling products.

Education

Georgia Institute of Technology, M.S. *Atlanta, GA*

Electrical and Computer Engineering - GPA: 3.7 *2016 - 2017*

Manhattan College, B.S. *Bronx, NY*

Computer Engineering, Minor in Mathematics - GPA: 3.6 *2012 - 2016*

Projects & Patents

3D Renderer using OpenGL and GLFW

C++, OpenGL, GLFW

- Designed and implemented a fast and scalable renderer for 3D models with OpenGL, using GLFW for window management, CMake for build configuration, and the OpenGL Mathematics library (GLM) for vector math and matrix transformations.

Personal Website Deployed with Django

Python, Django, JavaScript, Fullstack

- Deployed my personal website using the Django web framework with page information dynamically pulled from an SQLite database, hosted on Heroku.

Adaptive beamforming microphone metadata transmission to coordinate acoustic echo cancellation in an audio-conferencing system

- (US10854216B2) Patent on using the geometrical metadata of individually beamformed microphones to coordinate a multi-channel adaptive echo canceller (AEC) in an audio-conferencing system.

Skills

Programming	Python, C++, MATLAB, C, JavaScript, HTML & CSS, Markdown, SQL, Unix, Bash, AWS
Software & Packages	Tensorflow/Keras, PyTorch, numpy, scipy, pandas, matplotlib, git, Latex
General	Firmware Integration, Statistic Analysis, Low-Latency Code, Multi-Threaded Systems, C++ STL