

JAMES CONLON

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Education

Boston University

B.S. in Computer Engineering with CS Minor; GPA: 3.39

Expected May 2026

Boston, MA

Relevant Coursework

- Computer Organization
- Applied Algorithms
- Computer Networking
- Software Design
- Intro Logic Design
- Operating Systems
- Differential Equations

Experience

ei³ : Industrial Internet Intelligence

June 2024 – Present

Embedded Software & Security Intern

Pearl River, NY

- Developed custom integrations for MQTT data collection, an OpenVPN connector, and a REST API endpoint, enabling competitor devices to integrate with ei³ cloud solution and edge device hardware.
- Simulated a factory network with OPC-UA data collectors, visualization tools, and PLCs to evaluate how edge devices enhance machine efficiency and shop floor effectiveness for operators.
- Benchmarked ei³'s industrial IoT suite against key competitors, analyzing technical capabilities and user experience to identify strengths and areas for improvement in Remote Access/VPN and Data Collection features.
- Conducted business and SWOT analysis with documentation, providing strategic insights for marketing, sales, and product development teams.

BU Information Services & Technology

August 2022 – Present

IT Support Specialist

Boston, MA

- Diagnosed and resolved a range of hardware and software issues, including Windows/Mac/Linux support, academic software, networking, and identity verification.

Projects

FPGA-Based Keyboard Synthesizer | Verilog, FPGA, Digital Signal Processing, Team Project

December 2023

- Developed a digital synthesizer on Artix-7 FPGA, enabling simulation of musical notes and octaves.
- Designed a module for generating PWM signals with variable duty cycles to simulate sound waveforms including square, sine, and triangle waves.
- Integrated PS/2 keyboard input for control, along with a 7-segment display and audio output for feedback.
- Collaborated with team to address challenges such as sound generation and timing issues related to waveform indexing.

Android App: Boston Where Are U | Android SDK, Java, Team Project

December 2023

- Programmed an Android game for BU students that challenges players to identify local landmarks using a custom built map interface.
- Set deadlines for project development, integrated UI elements and backend logic.
- Implemented key features including custom overlays, TouchImageView map integration, and backend game management system with Android navigation components for fragment management.

Room Occupancy Monitor | Arduino, C++, Onshape, Team Project

April 2024

- Collaborated on development of device to monitor the occupancy of a room to prevent overcrowding and create a mechanical barrier to entry.
- Primarily responsible for coding occupancy tracking, integrating various sensors (infrared, ultrasonic) and input/output devices to maximize accuracy and reliability.
- Developed a heuristic algorithm to manage ambiguous sensor data and varying traffic patterns, enhancing the accuracy of room occupancy monitoring.

Technical Skills

Languages: C++, Java, Verilog, Python, Bash

Networking and IoT: VPN Configuration, MQTT, REST API, TCP/IP, Wireshark

Tools and Software: Linux, Arduino, MATLAB, Android SDK, Onshape, Kali Linux, Git

Other Skills: Industrial IoT, Network Troubleshooting, Technical Writing