Alexander M. Pratt

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EDUCATION

Brown University, *MS Computer Science*   Providence, RI | **Expected Graduation May 2025**
Relevant Courses**:** Computing at Scale (Harvard University), Design of Computing Systems, Embedded Microprocessor Design, Multiprocessor Synchronization, Seminar in Electronic Music: Real-Time Systems, Software Engineering
The Pennsylvania State University, *BS Computer Engineering*   GPA: 3.82 / 4.0   University Park, PA | **May 2021**
Relevant Courses**:** Computer Organization and Design, Field Programmable Devices, Introduction to Computer Architecture, Microcomputer Laboratory, Microprocessors and Embedded Systems, Operating Systems, Signals and Systems
The Pennsylvania State University, *BA Music Technology*   GPA: 3.82 / 4.0   University Park, PA | **May 2021**
Relevant Courses**:** Computer Music Synthesis, Programming for Musicians, Fundamentals of Digital Audio, The Science of Music

PROFESSIONAL EXPERIENCE (Select)

Sonos, *Software Engineer Intern*   Boston, MA | **June 2024 – August 2024**
- Created robust logging functionality of Sonos Control API messages to improve developer experience using C++ in Linux.
- Developed a tool in Python to automate the reuse of Sonos Control API data stored on Sonos speakers for faster bug triage.
- Contributed to team by completing 15 stories and 1 defect in software backlog, on top of 6 stories for my internship project.
- Utilized Google Test framework in C++ to create or modify unit testing for proper coverage of all new or modified code.

Raytheon, *Digital Signal Processing Software Engineer*   Tewksbury, MA | **July 2021 – February 2024**
- Developed complex DSP system software solutions for naval radar systems using C++, Python, and MATLAB in Linux.
- Worked in Agile environment with cross-functional teams to efficiently implement solutions.
- Led and participated in technical code and design reviews that addressed style, correctness, completeness, and efficiency.
- Team Subject Matter Expert on modularization of software constants for product independence.

Textron Systems, *Embedded Software Engineer Intern*   Wilmington, MA | **June 2020 – August 2020**
- Designed and implemented signal processing and user peripherals for an ARM microcontroller, embedded system in C++.
- Worked with electrical engineering interns to design, develop, and test a user training prototype.
- Worked on modelling of real-time antenna data in MATLAB.

TEACHING EXPERIENCE

Teaching Assistant, *ENGN 1630: Digital Electronics Systems Design (Brown University)*   **September 2024 – Present**
- Graded and assisted 50 students with homework assignments and labs centering around fundamental digital logic design.

Teaching Assistant, *ENGN 2920F: Sensors and Actuators for Real Systems (Brown University)*   **January 2024 – May 2024**
- Assisted with embedded software lab exercises for various sensor and actuator systems in C on ARM ST Microprocessors.

RELEVANT TECHNICAL PROJECTS

From DINO to DYNO, *COMPSCI 2420 Project (Harvard University)*   **September 2024 – Present**
- Investigated impact of using dynamic augmentation scheduling to improve efficacy of contrastive learning on classification.

Sports Broadcast Radio Delay, *ENGN1650 Project (Brown University)*   **September 2023 – June 2023**
- Engineered a sports radio, audio delay product using an Espressif microcontroller with I2C, SPI, BLE, ADC, and PWM in C.

Automated Graphics for Contemporary Performance, *MUSC1210 Project (Brown University)*   **Sept. 2023 – Dec. 2023**
- Designed a signal processing system that controls graphics in real-time based on spectral analysis of incoming audio stream.

HONORS

Raytheon, Achievement Award   Tewksbury, MA | **March 2023**
Raytheon, Achievement Award   Tewksbury, MA | **October 2022**
The Pennsylvania State University College of Engineering, Cum Laude   University Park, PA | **May 2021**
Eta Kappa Nu Honor Society   National Membership | **May 2020 – Present**
The Pennsylvania State University, Dean's List (seven semesters)   University Park, PA | **Various**

SELECT ACTIVITIES

Institute of Electrical and Electronics Engineers, Member   **January 2023 – Present**
Institute of Electrical and Electronics Engineers Signal Processing Society, Member   **January 2023 – Present**
Penn State ROARs Lab (Music Technology Organization), Member   **August 2020 – May 2021**
Lambda Chi Alpha Fraternity, Vice President of Philanthropy, Member   **May 2018 – May 2021**

SKILLS

Agile Development, C Programming Language, C++ Programming Language, Computer Architecture, Digital Signal Processing, Embedded Systems Software, MATLAB Scripting Language, Object-Oriented Programming, Python Scripting Language