Aidan O'Neill

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EDUCATION

Boston College   Chestnut Hill, MA
BA in Computer Science, BSc in Management: Concentration in Information Systems   *Aug 2021 – May 2025*
GPA: 4.0/4.0
Relevant Coursework: *Operating Systems, Natural Language Processing, Computer Networks, Algorithms*

EXPERIENCE

Undergraduate Research Assistant   Jan 2024 – Aug 2024
Boston College   *Chestnut Hill, MA*
- Contributed to all stages of research on the diffusion of technical tools in the U.S. economy, focusing on data management and analysis using Bass modeling for comparison.
- Refactored a shared R codebase, ensuring efficient and reproducible data processing, including scraping Wikipedia and working with large-scale datasets.
- Created visual diagrams for analysis, supported the literature review, and applied advanced R skills while learning new libraries (tidyverse, rvest, httr2, DIMORA).

Computer Science Society Treasurer   Sep 2023 – Present
Boston College   *Chestnut Hill, MA*
- Structured club's semester budgets, liaised with collegiate administration, and oversaw purchase approvals.
- Led fundraising initiatives and managed the budget for a hackathon at Boston College, securing both school backing and outside sponsorship.

Undergraduate Teaching Assistant   Jan 2023 – Present
Boston College   *Chestnut Hill, MA*
- Teaching Assistant for Financial Accounting, Python Programming, and Data Analytics & Applications in R, providing assistance with course material and technical support.
- Led weekly discussions explaining key Python libraries and functions and debugged student code.
- Taught data object concepts, data cleaning principles, and API/web scraping strategies in R, while grading and providing feedback on assignments.

PROJECTS

xv6 Development: System Calls, Backtracing, & Scheduler | *C, Vim*   Jan 2025 – Mar 2025
- Implemented multiple system calls (sleep, procinfo, trace, sysinfo) in the xv6 operating system, enhancing functionality and debugging capabilities.
- Integrated a multi-level feedback queue scheduler to optimize process prioritization and CPU utilization.
- Ensured memory safety, stable performance, and efficient resource usage while developing kernel and process space backtracing to improve system diagnostics.

Personal Tutor | *CircuitPython, FeatherWingV2, FeatherS2, I2C Gamepad*   Nov 2024 – Dec 2024
- Designed and developed a physical device for searching, displaying, and editing Magic: The Gathering cards, integrating a microcontroller, display board, and gamepad.
- Coded on-screen keyboard user-interface, loading bars, API queries, and image processing algorithms.
- Optimized memory usage in Python and incorporated a rechargeable lithium-ion battery for portability.
- Featured on DIY project website Instructables, receiving hundreds of views.

Full Stack HTTP & DNS Servers | *Java, VirtualBox*   Oct 2024 – Dec 2024
- Built an HTTP server with multithreading, error checking, and dynamic file response handling.
- Developed DNS server capable of parsing zone files and handling or redirecting queries for iterative resolution.
- Implemented DNS response caching with TTL for enhanced performance and reduced latency.

TECHNICAL SKILLS

Languages: C, Python, Rust, Java, R, JavaScript
Frameworks: CircuitPython, React
Developer Tools: Git, Vim, Oracle VirtualBox, VS Code, PyCharm, IntelliJ
Libraries: java.net, pandas, numpy, matplotlib