Matthew Mingus

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EDUCATION

Carnegie Mellon University – Heinz College   **Pittsburgh, PA**

Bachelor of Science in Information Systems, Additional Major in Human Computer Interaction   May 2027

- **GPA:** 3.5/4.0
- **Relevant Coursework:** Fundamentals of Programming and Computer Science, Principles of Imperative Computation, Database Design and Development, User Experience Research for Product Managers, Designing Human Centered Software

WORK EXPERIENCE

CMU Heinz College of Information Systems and Public Policy   **Pittsburgh, PA**

Undergraduate Student Researcher   *June 2024 – Present*

- Conducting AI chatbot research analyzing U.S. voter sentiment during the 2024 election cycle to measure the influence of AI-driven chatbots on public opinion
- Designing surveys and conducting experiments with GPT API and R for modeling, data visualization, and trend analysis
- Featured presenter at Conference on Digital Experimentation @ MIT 2024, sharing insights with leading experts on digitally mediated social and economic environments. Read abstract of preliminary findings here.

LEADERSHIP EXPERIENCE

ScottyLabs   **Pittsburgh, PA**

Director of Finance   *Sep 2023 – Present*

- Managing all financial operations, funding all software projects, APIs, and events that serve 5,000+ active users monthly
- Secured a 7x increase in sponsorship funding by restructuring the financial strategy, achieving the highest sponsorship total in 15 years
- Developed targeted sponsorship outreach, leading to 13 partnerships for TartanHacks, Pittsburgh's largest hackathon
- Increased TartanHacks participation by 160% year-over-year by enhancing financial accessibility and event marketing

CMU Ski & Snowboard Club   **Pittsburgh, PA**

Vice-President   *Dec 2023 – Present*

- Winter activity club hosting two trips per month to Seven Springs Resort from January to March with over 350 members
- Improved accessibility by subsidizing costs, handling logistics, and controlling limited weekly trip slots for members
- Worked with local ski resort and bus company to provide discounts on lift tickets, rentals, gear, and transportation

PROJECTS

Online Bakery Ordering System   *February 2025*

- Developed an end-to-end database solution for an online bakery using Ruby on Rails and ActiveRecord, supporting order tracking, billing, and customer profiles
- Constructed comprehensive unit tests with 100% coverage using SimpleCov and managed version control though Git

Discord Database Prototype   *November 2024*

- Developed a working prototype database for Discord using python, psycpog2, and integrated SQL scripts to handle core features such as user management, messaging, and server operations
- Designed automated content moderation tools and server analytics features to optimize data storage and retrieval efficiency

C0VM   *April 2024*

- Independently constructed a set of bytecode instructions to represent arbitrary languages C0/C1 designed as memory-safe subsets of the C language to enable program verification
- Interpreted C0/C1 bytecode and run instructions in real time, similar to JVM, and extended C0VM by adding support for function pointers and void* pointers using C

Image Resize and Pixel Editor   *March 2024*

- Developed an image processing program in C, featuring cropping, resizing, and steganography for embedding and extracting hidden pixel data using quality-based bit manipulation
- Implemented advanced resizing algorithms, including horizontal and vertical stretching with pixel interpolation and matrix transposition, ensuring accurate scaling and efficient memory usage

SKILLS

Programming Languages: Python, C, C++, JavaScript, PostgreSQL (SQL), MongoDB, Ruby on Rails, HTML/CSS
Tools & Frameworks: Git/GitHub, R Studio, Visual Studio Code, Xcode, Canva, Figma, Microsoft Office Suite