Amber Campbell

1campbellamber@gmail.com | (224) 908-7002 | Chicago, IL | ambercampbell.github.io/ambercampbell

EDUCATION

University of Michigan-Ann Arbor   **Ann Arbor, MI**
B.S. Computer Science, Minor in History of Health and Medicine   *May 2025*
- 3.96/4.0 GPA
- **Relevant Coursework**: Advanced Operating Systems, Web Systems, Data Structures and Algorithms, Practical Data Science, Applied Biostatistics, Introduction to Computer Architecture, Agent-Based Modeling
- **Extracurriculars**: Sexual Assault Prevention and Awareness Center Volunteer (Art Show Chair, 2022), Girls in EECS, Alpha Delta Pi Sorority (Director of Inclusion, 2022), Public Health Association

University of College London   **London, England**
Exchange Semester in History and Philosophy of Science   *Jan. 2024 – May 2024*

SKILLS

Programming Languages: C++, PHP, Python, JavaScript, HTML/CSS, SQL, R
Frameworks and Libraries: Laravel, Flask, Django, React, Redux, RESTful APIs, Pandas, CPLEX
Databases: PostgreSQL, MySQL, SQLite
Tools: Docker, Postman, WSL/Ubuntu, Git, JIRA, GDB, Visual Studio, VSCode, AWS (S3)

WORK EXPERIENCE

Center For Healthcare Engineering and Patient Safety   **University of Michigan — Ann Arbor, MI**
Healthcare Engineering Intern   *Aug. 2023 – Jan. 2024, Aug. 2024 – Current*
- Developed modular Python libraries incorporating design patterns to bootstrap simulation optimization projects for healthcare operations, with functionality to read inputs, store data, and generate metrics
- Designed algorithms using CPLEX to generate optimized shift schedules based on working constraint and time off requests, increasing operational efficiency for 20+ trauma physicians and administrators

DOCSI Health   **Minneapolis, MN**
Software Engineering Intern   *June 2024 – Aug. 2024*
- Implemented dynamic, mobile-friendly dashboard features for a surgical waste elimination platform using React, engaging physicians and providing real-time insight into supply usage and cost reduction opportunity
- Built and deployed scalable back-end services with PHP (Laravel) and PostgreSQL, developing RESTful APIs to streamline communication between front-end and database and provide efficient data access

Menlo Innovations   **Ann Arbor, MI**
Software Engineering Intern   *June 2023 – Aug. 2023*
- Designed and developed a web application using Python (Django), HTML/CSS/JavaScript, and PostgreSQL to identify and evaluate blood-thinner prescriptions, leveraging FHIR standards for seamless EHR integration and adhering to HIPAA regulations to ensure data security
- Implemented an asynchronous Alert Engine with cron jobs to process data dynamically, deployed on AWS, and optimized for compatibility with Epic Hyperspace, reducing prescription error and enhancing patient safety

PROJECTS

Michigan Plan For Appropriate Tailored Healthcare (MiPATH)   **Michigan Medicine — Ann Arbor, MI**
Computational Research Assistant   *June 2023 – Aug. 2023*
- Enhanced a C++ discrete-event simulation for prenatal appointment scheduling, integrating dynamic features informed by real-world datasets, generating data outputs to analyze for support of new clinical guidelines

Threading Library in C++   **University of Michigan — Ann Arbor, MI**
Advanced Operating Systems   *Fall 2024*
- Co-designed and implemented a robust threading library using RAII principles to manage thread lifecycles and ensure resource safety, optimizing CPU scheduling to achieve high concurrency and synchronization efficiency
- Built advanced multi-threading mechanisms, including thread creation, yield, join, mutex locks, condition variables, and interrupt handling for multi-CPU environments.