Miles (Milo) Banks

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github.com/milobanks

Education

University of Utah, Salt Lake City, UT
Bachelor of Science (B.S.), Computer Science and Microbiology
Expected Graduation: May 2029
Rowland Hall, Salt Lake City, UT
High School Diploma
Graduated: April 2025, GPA: 3.8

Professional Experience

Web Systems Lead, Undisclosed Political Nonprofit, Salt Lake City, UT
Software Developer March 2025 – *present*

- **Coordinated** with the national branch to ensure **security protocol compliance** and optimal safety on the organization's statewide self-hosted Matrix server.
- Led organizational OPSEC/INFOSEC initiatives, creating and **enforcing cybersecurity protocols** for staff, volunteers, and digital infrastructure.
- Contributed to the redesign and deployment of the primary website and internal tooling, improving **external communication** goals.

Division of Epidemiology, University of Utah, Salt Lake City, UT
Software Developer May 2024 – *present*

- Developed front-end interfaces and ported epidemiological simulation software to **improve usability** and functionality.
- Enabled researchers to access and interact with **complex data** more efficiently, helping to **secure funding** from state and federal sources.
- Facilitated **inter-organizational communication** with the Utah Department of Health for planning preemptive measures against the 2024-2025 nationwide Measles outbreak.

Salt Lake Digital, Salt Lake City, UT
CEO, Software Developer May 2024 – January 2025

- Worked directly with small-to-medium-sized businesses to **design** and implement e-commerce stores and informational **websites**.
- **Optimized** web presence according to **search engine optimization** practices and telemetry.

Academic Experience

epiworld: A Fast Multi-language Library for Epi ABMs
Conference on Complex Systems, Exeter, UK September 2024
Authors: George G. Vega Yon, Derek Meyer, Milo Banks, Matthew Samore
Presented work on agent-based modeling infrastructure enabling efficient epidemiological simulations across R, Python, and C++ backends.

Revisiting Field Cancerization To Uncover Mechanisms Underlying Ductal Carcinoma in Situ (DCIS) Recurrence
American Association for Cancer Research (AACR) Annual Meeting, Chicago, IL April 2025
Authors: Padmashree Rida, Olivia Banks, Sophia Hu-Lieskovan, Merrick Davidson, Grant Downes, Nikita Jinna
Presented review findings on microenvironmental and clonal drivers of recurrence in early-stage breast cancer using spatial modeling techniques.

Projects

Bindutil
*A **header analyzer** and **binding compliance** checker, written in **Python**, run against a production ABM framework.*
github.com/milobanks/koi
Ook
*An investigative **object-oriented kernel**, written in **C++**.*
github.com/milobanks/ook
Kojiki
*A converter for GNU Makefiles to Ninja files for **faster iterative builds**, written in **C**.*
github.com/milobanks/kojiki
IPSD
*Led project to allow for **sandboxed remote environment access**, for workshops and demos, in **C**.*
github.com/UofUEpiBio/ipsd

Skills

- **Soft Skills:** Community Engagement, Logistics and Planning, Interpersonal/organizational Communication
- **Programming Languages (Proficient):** C, C++, Rust, Python, HTML/JS/CSS, UNIX Shells
- **Programming Languages (Familiar):** C#, Kotlin, Java, R, Perl, LaTeX
- **Operating Systems:** NetBSD (kernel, userland), Linux (kernel, userland), macOS (userland)
- **Development Tools:** CMake, Meson, GNU Make, Valgrind, GitHub Actions/CI
- **Testing:** GoogleTest, Catch2 (C/C++) PyTest (Python), TinyTest (R)
- **Version Control:** Git, GitHub, sourcehut, PR/send-mail

Leadership and Achievements

Organizational Security Implementation, Undisclosed Political Nonprofit March 2025

- **Designed** and **implemented** comprehensive OPSEC and INFOSEC protocols, including device hardening, encrypted communication channels, and access control policies.
- Trained staff and volunteers in secure practices, significantly **reducing risk exposure** across critical communication and collaboration platforms.
- Contributed to the organization's ability to **safely scale** digital operations in a sensitive political environment, protecting both personnel and **data integrity**.

Public Health Simulation Planning, University of Utah Division of Epidemiology January 2025

- **Facilitated coordination** between the University of Utah and the Utah Department of Health to design simulations modeling the impact of various preventative strategies on Measles spread in school settings.
- Presented simulation capabilities and early findings to stakeholders from the **CDC** and **NIH**, contributing to the renewal of federal funding for ongoing research.

Open Source Project Lead July 2021 – July 2022
github.com/milobanks/greatness

- Created and maintained a dotfile management tool that gained **109 stars** within a few weeks.
- Maintained community contributions and engagement.

Lead Software Developer, Rowland Hall Iron Lions (FTC Team 19922) October 2022 – May 2024

- Led a team of four in a competitive robotics competition, architecting a **novel framework** allowing for faster iteration, fewer bugs, and closer hardware team integration.
- Strengthened leadership, problem-solving, and collaboration skills, delivering **high-quality solutions** under pressure.