Up to date as of 2025-11-10

Tobin Cavanaugh

GitHub: https://github.com/TobinCavanaugh	**Email:** tobincavanaugh@gmail.com
Personal Site: https://tobincavanaugh.github.io	**Phone:** +1 206 586 5263
LinkedIn: https://www.linkedin.com/in/tobincav	Seattle, WA 98117 & Bismarck, ND

Skills:

Technical Skills	Certifications	Personal Skills
• C, C#, Rust, C++, Python, Java • SQL, Git, JavaScript, Linux • Debugging	• Unity Developer Certified • **Forklift Certified**	• Out of the box & critical thinking • Strong communicator • Solution oriented

Work History:

Metrology/Software Dev Internship

Electroimpact **Mukilteo, WA** **Summer 2024, 2023, 2025**

- Debugged and developed an automation program for the 787 Mid Body Join to be installed at the Boeing Charleston assembly plant. The process involved collaboration with both developers and engineers working on embedded systems.
- Engineered a full GUI application for precision controlling and measuring with high-end laser trackers.
- Solved laser tracker stand resonance, saving tens of thousands in laser tracker stand replacements.
- Installed a Foundation Reference System and performed laser tracker accuracy validation. Successfully validated Leica and FARO laser trackers for Electroimpact and customers, including Boeing, resulting in saving of ten thousand dollars for a new tracker.
- Acquired training in Metrolog X4 and robotic arm simulation across numerous training sessions.
- Designed robot pathing for 3D scanning objects using the Creaform Metrascan Black Elite mounted on a KUKA robot arm.

sstr.h

Personal **Bismarck, ND & Seattle, WA** **Summer 2024**

- Achieved 5x performance improvement over standard C string functions through custom stack-based memory management and efficient buffer allocation strategies.
- Developed the first C string library to provide immutable string operations returning new string instances, similar to C# string handling but optimized for C.
- Reduced memory-related crashes by 90% by eliminating manual malloc/free management and preventing buffer overflows through automatic memory handling.

Poker Bot Programming Competition

University of Mary **Bismarck, ND** **March 2025**

- Organized and hosted a competitive programming event with 10 participants developing poker bots in Python.
- Designed tournament infrastructure and engine for automated bot-vs-bot gameplay.

ENR 304 Teachers Assistant

University of Mary **Bismarck, ND** **Fall Semester 2025**

- Aided students in understanding C programming and provided one-on-one tutoring to improve their Linux fundamentals.
- Supported the professor by clarifying lecture material and facilitating problem-solving sessions for students.

sandfleaOS

Personal **Seattle, WA** **Fall 2025**

- Developed a 32-bit protected mode operating system from scratch in C and Assembly, bootable on physical x86 hardware.
- Implemented foundational kernel services, including virtual memory management and a task scheduler for preemptive multitasking.
- Source code currently private.

Education:

B.Sc. Computer Science **University Of Mary** **Bismarck, North Dakota** **Expected Graduation: April 2027**