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 collaborating with a team both developers and engineers.
- 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**

- Developed the first C string library to provide immutable string operations returning new string instances, similar to C# string handling but optimized for C.
- Achieved 5x performance improvement over standard C string functions through custom stack-based memory management and custom datastructures.
- 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**