# Tobin Cavanaugh

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## Summary:

Strongly focused on quality code, optimizing for both speed and reliability. Very strong C and C# programmer. I have a strong focus on my programming abilities and am extremely driven to become a better programmer and improve the state of computers. My main hobby is programming, building applications, and trying to find what needs to be improved.

## Work History:

### Metrology Internship

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| **Electroimpact** | Mukilteo, WA | Summer 2024 & Summer 2023 |

* 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 (FRS) and performed laser tracker accuracy validation. Successfully validated multiple laser trackers for Electroimpact and customers, including Boeing, resulting in saving of ten thousand dollars for a new tracker.

### sstr.h

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

* Created sstr.h, a high-performance novel implementation string modification library for C, innovating on C string manipulation.
* Implemented a previously considered impossible concept that improves performance, memory usage, and safety. sstr.h results in 2x faster execution and decreasing the chances of crashes and memory leaks by a factor of ten.

### fstr

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| **Personal** | Bismarck, ND | Summer 2024 |

* Created fstr, a high performance and safe string library for C making use of a novel string architecture. This method invalidates the most common programming security exploits responsible for billions of dollars of losses.
* Allowed programmers to use C strings in a safer way, performing complex functionality quickly, conveniently, and without concerns about crashes.
* Wrote more than 64 functions for manipulating and modifying strings, totaling over 1400 lines of tested code.
* Handmade beautiful and functional web documentation, used by many to learn the library.

### Upon The Wind

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| **Personal** | Seattle, WA | Spring 2023 |

* Created a fully-fledged game in Unity, a cohesive, Ghibli-like style and nine unique environments.
* Made aesthetically pleasing art assets and animations using Blender, resulting in a beautiful and highly performant game that stays at a constant 60fps.

## Skills:

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| **Hard Skills** | **Certifications** | **Interpersonal Skills** |
| * C Programming * Out of the box & critical thinking * C#, Rust, Python, Java, JavaScript * Unity & Raylib game development * Debugging | * Unity Developer Certified | * Quick learner * Strong communicator * Cooperative and motivated * Solution oriented * Positive attitude & flexible |

### Education:

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| Bachelor of Computer Science | University Of Mary | Bismarck, North Dakota | Expected Graduation: April 2027 |