

Education

May 2019
Sept 2016

University of Michigan — GPA: 3.2

Degree: Computer Science BSE.

Courses: Computer architecture, operating systems, computer security, video game development, artificial intelligence.

Employment

Sept 2018
Feb 2014

Software Developer at Ann Arbor T-Shirt Company

Developed features and fixes in a small team for quote building software, production tracker, and retail backend using Ruby on Rails.

Improved image composition tool in C++ using libpng. 1.5× speedup over original.

Set up and managed AWS Virtual Private Cloud infrastructure.

Programmed Arduino to control fans based on temperature for screen drying.

Integrated with several 3rd party APIs for services including Shopify, Amazon, PayPal.

Implemented robust error reporting and handling across apps.

Extracurricular

Always
2011

Small 2D Sprite Renderer in Rust+OpenGL

GLFW for window management and runtime code reloading:

- Main loop in executable, game code in dynamic library. Main loop waits for updated DLL, then re-loads symbols and recompiles shaders.

JVM Bytecode Patching for Minecraft Mod

Used `org.objectweb.asm` namespace to traverse instructions for each class.

Patched entity collision method to potentially return early after performing a test.

Wine (winehq.org) Shell Notification Bugfix

The bug: “new folder” button didn’t always show the new folder.

Traced back to unimplemented behavior in `SHChangeNotifyRegister`.

Languages

C, C++, C#, Java, Ruby, Python,
SQL, Rust, Prolog, Verilog,
HTML, CSS, Javascript, \LaTeX

Technologies

MacOS, Linux, Windows
Unity3D, Unreal Engine, Godot,
Visual Studio, GNU Make, Git,
Wireguard, OpenVPN

School Projects

Multiplayer game in team of 4.
Thread library, memory pager, filesystem.
NES controller interface circuit.