

# MATTHEW ROTH LISBERGER

<https://github.com/asterane>

Washington, DC

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Engineer with customer service experience, extreme attention to detail, and advanced technical ability. Looking to utilize expertise from years of software and electronics work to solve important problems.

## SKILLS

### Software

- Advanced programming with C and Rust
- Coding on Linux, Windows, & microcontroller
- Experience debugging with GDB and Valgrind
- Familiar with data structures and algorithms
- Writing fast, memory safe, low level code

### Communication

- Typing speed of over 80 words per minute
- Reading / writing technical documentation
- Project work with multidisciplinary teams

### Electronics

- Verilog, Vivado, and FPGA programming
- Operating mixed signal oscilloscopes
- Electronic design with Kicad, LTspice, & paper
- Analog & digital circuit design and analysis
- Design with nonlinear circuitry / op amps
- Familiarity with DSP techniques and FFT
- Knowledge of communications techniques
- Integrated hardware / software system design
- Troubleshooting complex integrated systems

## EMPLOYMENT

### Utah State University Event Services

2021

*Audiovisual Event Technician*

*Logan, UT*

- As part of a team, enabled events across a large college campus, achieving perfect customer ratings

### Fairfax County Public Schools

2018 - 2020

*Senior Student Technician*

*Fairfax, VA*

- Provided quality event AV services for hundreds of hours; improved processes & secured promotion

## EDUCATION

### Thomas Jefferson High School for Science and Technology (TJHSST)

Class of 2020

*Electrical Engineering Focus*

*Alexandria, VA*

- **Coursework:** Electronics Research, Microprocessors, Technical Theater, Computer Science

## EXPERIENCE

### STARK (*Open Source CAD Prototype*)

2020 – Present

- Designed and implemented a new Lisp dialect with concurrency primitives and novel data structures
- Created a 2D renderer linked to a Lisp interpreter, using Rust and the Vulkan API, from scratch

### The Grid (*Custom LED Display Board*)

2019

- Led a team to build a large physical, software, and electronic system of own design
- Used root cause analysis to find and fix problems throughout a complex networked system

### TJHSST Theater Arts

2017 - 2020

*Lighting Engineer, Lead Set Designer, Architect*

*Alexandria, VA*

- Facilitated manufacture of large movable set pieces for four major productions
- Authored detailed manual on spotlight operation for future student technicians