

# Alex M. Harry

Computer engineer with a strong mathematics background. Skilled at embedded programming with experience working for Northrop Grumman on hardware security. Seeking [role]

## EDUCATION

Rochester Institute of Technology

2019-2024

Bachelor of Science in Computer Engineering & Computational Mathematics

### Advanced Courses

- Memory Centric Computing
- Graph Theory
- Interface and Digital Electronics
- Mathematical Modeling

### Key Projects

- **n-Dimension Optimization** C++ program to find global max/min on a domain of data using Gröbner basis, and eigenvalues of the companion matrix to solve for roots of the gradient
- **Soft MIPS** VHDL pipelined processor and a Java MIPS32 compiler
- **SPICE PIM Architecture** LUT processor in memory architecture using LTSPICE

## WORK HISTORY

Northrop Grumman

Systems Engineer

Baltimore, MD  
01/22 - 08/22

### Key Projects

- **NG SecMon** VHDL hardware security logic used to monitor native channels interfaced by AHB
  - Used Xilinx 7-Series FPGA to for bitstream validation
  - Implemented ground up technologies such as watch dog timers
- **NIST Cybersecurity Mapping Interface** NIST vulnerabilities correlated to CERT attack patterns in an interactive webpage format for to validate source code checker coverage
  - Used webscraping to read in data from NIST, CERT, and Sonar Source documentation
  - String processing to correlate the data sets and map relationships
  - Use of HTML/CSS/JS to make interactive tree structures that empowered limb trimming, selecting root node, data filtering, and source correlation

Startup Accelerator

Founder

Rochester, NY  
05/23 - 08/23

Built a business plan informed by customer discovery interviews with a seed round presentation and product R&D

### Key Projects

- **C++ Render Engine** Engineered a 3D rendering engine in C++ with SDL2 integration, demonstrating advanced programming and system design skills
  - Self motivated project requiring significant independent research
  - Significant use of class structures and hierarchy design

## Contact

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## Skills

### Programming

C/C++, CUDA, OpenGL, Matlab,  
HTML/CSS/JS, Java, ARM, MIPS

### Hardware

VHDL, ZYNQ & 7-Series FPGA, MCU &  
µProcessors, Jetson Nano,  
Oscilloscope, 3d-printing

### CAD

Blender, Fusion 360, Rhino &  
Grasshopper

### Interpersonal

Leadership, Presentation, Teaching,  
Project Management

## Security Clearance

Northrop Grumman: DoD Secret

## Extracurricular

Eagle Scout 2018  
FRC Robotics