

# Isaiah Robert Grace

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github.com/IsaiahGrace

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## Education

Purdue University, West Lafayette IN

**GPA: 3.40**

Bachelor of Science in Computer Engineering, Minor in History

Aug 2015 – Dec 2019

**Relevant Coursework:** Data Structures & Algorithms, Computer Architecture, Microcontrollers, Object Oriented Programming

## Technical Skills

C/C++	Assembly	Java	Regular Expressions	SystemVerilog	Cadence software
Python	Bash	Git	Questa-Sim	Linux	PowerPoint
L <sup>A</sup> T <sub>E</sub> X	Matlab	Scheme	FPGA Synthesis	Microsoft Office	KiCad PCB Layout

## Research and Project Experience

### SOCET Research Team, Senior design project

Apr – Dec 2019

Coordinated the work of two teammates in creating a custom layout for two logic cells. Specified, documented and implemented the digital logic design for an APB bus peripheral device. Integrated the team project into the larger System on a Chip for fabrication at MIT Lincoln Labs.

### Tetris hand-held console

Mar – May 2019

Planned and organized a team of four in developing a STM32 based handheld Tetris console. Created an SPI driver for the embedded display using embedded C++ and assembly.

### ASIC Module Design for USB to AHB bridge

Nov 2018

Collaborated to design and test a USB interface module suitable for use on an SoC.

Personally designed and wrote SystemVerilog code for the USB receiving/decoding submodule.

### Zork Text Adventure

Oct 2018

Partnered with another student to create a C++ version of the 1977 Zork text adventure game. Utilized Object Oriented Programming and version control.

### 1<sup>st</sup> place in Data Structures – Big Data Challenge

Oct 2017

Wrote and optimized Huffman encoding of arbitrarily large data input with multi-threading. Applied principals of data structures and algorithms to heavily optimize C code.

Placed first of 83 students in fastest compression of 64GB of data.

## Work Experience

### Student researcher: Purdue SoCET team, physical design group

Jun – Aug 2019

Developed layout, place and route, and floorplanning workflows using Cadence software for the SoCET System on a Chip physical design.

### Grader: ECE369 Discrete Mathematics

Jan – May 2019

Graded Discrete Mathematics course assignments covering theory of computation, formal logic, graph theory, mathematical induction, state machines, and regular expressions.

### Raft Guide: Outdoor Adventure Rafting

May – Aug 2018

Guided on class IV-V whitewater. Responsible for customer satisfaction and safety in demanding and dynamic workplace environment. Certified Wilderness First Responder.

### Operator: Purdue Rare Isotope Measurement Laboratory

Jan 2016 – May 2018

Collected and verified data from Purdue's linear particle accelerator. Operated the accelerator during overnight shifts and responded to emergency shutdowns due to sparking in the accelerator chamber.

## Leadership

### Whitewater Kayaking & Caving Consultant

Purdue Outing Club

May 2016 to Dec 2019

Lead and organized caving and whitewater kayaking trips. Ensured safe environment for all participants and practiced inclusive leadership within groups.

### Facilitator, participant

EMV Sophomore Leadership Retreat

Sep. 2016, 2017, 2018

Participated in, and twice facilitated, a leadership retreat exploring inclusive leadership in the classroom and workplace.

### Eagle Scout, BSA

2014