# Ian Samuel Jackson

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## *Interests*

- **Hardware Design**: Computer architecture, CPU/GPU design, VLSI, Circuit design

## *Experience*

**ManTech**                                                        Clarksburg, WV
*Application Developer Intern*                          Feb. 2022 - Present
- Programmed automated test on FBI's Crime Data Explorer (CDE), Uniform Crime Reporting (UCR), and Use-of-Force (UOF) while maintaining an active TS/SCI.
- Test utilized CodeceptJS with JavaScript, HTML, and CSS.

## *Projects*

- **W65C02S Computer**
  - Constructed an 8-bit computer running at 1 MHz using the W65C02S microprocessor, 32 KB EEPROM, 32 KB SRAM, a versatile interface adapter, and a dot matrix LCD screen on a breadboard.
  - Programmed in Assembly to display information on the LCD.
- **Design of a Simple CPU**
  - Designed an 8-bit CPU equipped with 32 bytes of RAM and 3 different op codes.
  - Implemented on the Intel DE-10 Lite FPGA device and programmed in VHDL.
- **Graphics Card using ICs**
  - Assembled a graphics card using ICs and a 32 KB EEPROM to display an 800x600 image running at 1 MHz via a VGA cable
  - Integrated with the W65C02S computer to fetch image data from the SRAM.
- **Ping Pong Scoreboard**
  - Created a scoreboard for a ping pong table using an Arduino Uno R3 and an LED matrix.
  - Coded in C++ using the Arduino IDE.
- **CMOS Logic Optimization**
  - Calculated the optimal MOSFET width and length for a given CMOS logic network.
  - CMOS logic network was designed and simulated in LTSpice.
- **ScoreKeep App**
  - Programmed an iOS app to track scores of frisbee golf and darts games.
  - Coded in Swift using XCode with a Firebase backend.

## *Skills*

- **Hardware**: Intel DE-10 Lite, Arduino, Raspberry Pi, Various ICs
- **Languages**: Java, JavaScript, VHDL, Assembly, MATLAB, C/C++, Swift, HTML, CSS
- **Software**: LTSpice, VSCode, XCode, Quartus Prime, Eclipse, Autodesk Inventor, JMP

## *Education*

**West Virginia University**                                   Morgantown, WV
B.S. in Computer Engineering – CGPA: 4.0          Aug. 2020 – May 2024 (exptd.)
- Area of Emphasis in Cybersecurity, Minors in Mathematics and Statistics
- IEEE HKN member