David S. McDermott

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HIGHLIGHTS Schreyer Scholar at The Pennsylvania State University pursuing dual degrees in computer and electrical engineering with concentrations in computer architecture and solid state engineering. Experienced in automated data processing, visualization, and VLSI in a professional setting and operating systems programming, silicon device fabrication, and computer architecture in an academic setting.

SKILLS

Programming Languages: Java, C, C++, x86 Assembly, MIPS Assembly
Scripting Languages: Python, MATLAB, Shell (Bash), Perl, PHP
Development Tools: GCC, GDB, Make, Visual Studio, Vim, MPLAB, Virtuoso
Design Tools: Cadence Virtuoso, Autodesk EAGLE, NI Multisim
Databases: DB2, SQL Server, MySQL, MariaDB, SQLite, Neo4j

EDUCATION

Bachelor of Science Computer Engineering, Electrical Engineering
The Pennsylvania State University, University Park, PA — May 2019
College of Engineering & Schreyer Honors College
Majors: Computer Engineering, Electrical Engineering — GPA: 3.53/4.00

EXPERIENCE

Design for Test and Characterization Intern — May 2018 - Present
IBM, z/Systems, Poughkeepsie, NY

- Assisted in migration from single use Perl scripts to object oriented Python
- Assisted in development of new test platform with with Linux drivers and FPGA
- Developed CP characterization routines that ran 40% faster than before
- Developed interactive testing and visualization platform for characterization
- Identified potential 3% reduction in dynamic power of latches for z/CP

Relevant Skills: Python, Jupyter Notebooks, SQL, Neo4j, Cypher Query, VLSI

Visualization Intern — May 2017 - May 2018
The Pennsylvania State University Applied Research Laboratories, Synthetic Environments and Applications Laboratory, University Park, PA

- Supported development for existing visualization applications in an Agile team
- Parallelized physics simulation and rendering engines on existing application
- Developed several new data pipelines for databases, blockchains and Excel

Relevant Skills: Java, OpenGL, C, SQL, SQLite, Apache Tomcat, Unity 3D, C#
Other Information: Active US Secret Clearance

PROJECTS

Wristband Scanner — Spring 2018 - Present
The Pennsylvania State University, HackPSU

- Worked with a team of several other students to develop an IOT scanner
- Developed C++ abstractions for Arduino to interface with RFID scanner chips
- Worked on developing architecture for networking with web server and local proxy

Relevant Skills: C++, Arduino, PCB Design, Antenna Design

Pixel Based Texture Synthesis — Fall 2018
The Pennsylvania State University, CMPSC 458

- Developed Python interface for texture synthesis algorithm and calling script
- Implemented pixel based texture synthesis using Efros-Leung method
- Made performance improvements using Python list comprehensions and multithreading

Relevant Skills: Python, Computer Graphics, Statistics, Digital Image Processing