Nathaniel Perkins

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# Education

University of California San Diego San Diego, CA

Bachelor of Science in **Computer Engineering** March 2018

Relevant Coursework: Introduction to Computer Science and Object Oriented Programming, Data Structures and Object Oriented Design, Techniques and Tools Lab, Discrete Math, Math Algorithms and Systems, Computer Organization and Systems Programming, Intro to Analog Design, Advanced Data Structures, Software Engineering , Design and Analysis of Algorithms, Engineering Probability and Statistics, Intro to Differential Equations, Linear Algebra, Vector Calculus , Components and Circuits Laboratory, Principles of Computer Operating Systems, Introduction to AI: Search and Reasoning, Database System Principles, Component and Design Techniques for Digital Systems, Digital Systems Laboratory, Computer Architecture, Microelectronic System Design, Advanced Digital Design Project, Web Client Languages, Introduction to Parallel Programming

# Experience

United States Patent and Trademark Office Alexandria, VA

Patent Examiner July 9, 2018 – May 17, 2019

* Developed and implemented a search strategy to determine the patentability of **at least (put in how many)** pending applications
* Conducted thorough art searches relevant to **fill in the blanks**
* Conducted interviews with patent agents and attorneys in order to further prosecution
* Composed office actions concerning compliance with statutes and regulations and reported findings to supervisor

Sherman Heights Community Center San Diego, CA

Mathematics Tutor Spring 2015

* Worked efficiently with an underprivileged elementary grade student to improve basic understandings of mathematics
* Communicated effectively with parent and counselor with regard to the needs of the student
* Explained concepts in easy-to-understand terms to facilitate learning of basic mathematics

# Projects

**Operating System Development**

* Implemented various parts of the NACHOS Operating System developed by Berkeley, including thread, multiprogramming, and virtual memory support – **did you create something?**
* Worked in a three-person team using Java OOP concepts to meet project specifications **any complicated specifications?**

**Parallel Programming Project: Cholesky Matrix Decomposition**

* Used OpenMP in C to factor a given matrix into a product of a lower triangular and its transpose
* Parallelized the algorithm into a block-based approach to make use of multiple available threads
* Tested the program with large matrices on the Triton Shared Computing Cluster (TSCC)

**Reduced Instruction Set Computer (RISC) Design**

* Designed a system with limited resources using System Verilog to perform 16-bit integer division and string search algorithms
* Created a custom, 9-bit accumulator ISA and designed different processor elements (ALU, PC, Registers, etc.) optimized to meet project specifications

# Skills

* *Languages*: Java, C, C++, Python, SQL, MATLAB, SPARC Assembly, System Verilog, VHDL, HTML, CSS, Javascript
* *Tools*: Git, Vim, Microsoft Office, Android Studio, Eclipse, Modelsim, Quartus, MPI, OpenMP
* *Operating Systems*: Linux/UNIX, Windows
* Experience with computer hardware assembly and maintenance