Sara Seacat

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Website: seacat.me – Github: github.com/sseacat

Education

University of California, Berkeley August 2011 - December 2015
Computer Science, 3.0

Coursework:

- Computer Security (CS161)
- Introduction to Robotics (EE C125)
- Great Ideas in Computer Architecture (Machine Structures) (CS61C)
- Data Structures (CS61B)
- Introduction to Computer Programming for Scientists and Engineers (E7)
- Discrete Mathematics and Probability Theory (CS70)
- Introduction to Digital Electronics (EE100)
- Linear Algebra and Differential Equations (Math 54)

Skills

Programming: Python, Java, C, Javascript, MATLAB, HTML, CSS, jQuery, Hadoop, OpenMP, Robot Operating System, MIPS, JUnit, Android SDK, SSE Intrinsics, Logisim, LaTex, Object-oriented programming,
Other: Mandarin Chinese (simplified), InDesign, Photoshop

Projects

- Developed personal website using HTML and CSS (seacat.me).
- Web tech for the Geological Association at Berkeley website (osf.berkeley.edu/~geologic/gab).
- Wrote an RSA decryption function in C that optimized modular exponentiation by repeated squaring.
- Worked on the Baxter robot using ROS and Python.
- Implemented the CPU, ALU and registers for a 2-stage pipelined processor for the Ida assembly language using Logisim.
- Wrote two versions of a digit recognition program. The first optimized CPU performance by using Intel SSE intrinsics, OpenMP, register blocking and loop unrolling; the second optimized GPU performance by using the CUDA framework.
- Used the Hadoop framework to implement two MapReduce jobs, the first constructs a full game tree for Connect 4 by generating all possible child game states given the parent game state; the second uses minimax to label each game state with a win, loss or tie value. Solved large game trees by using Amazon EC2.
- Fixed bugs and worked on backend of the Snap! programming language using JavaScript.
- Implemented a Java representation of the graph data structure and used that package to build a simplified version of the Unix "Make" program as well as a program that outputs the shortest route between two cities given a list of roads and cities.
- Created a territory capture board game based off the game KJumpingCube using object-oriented programming in Java.
- Implemented a simplified version of LaTex in Java that spaces and justifies a text file.
- Built a MATLAB program that takes an image and applies various transformations on random squares of the image and times how long the user takes to click on the distorted section of the image.

Work History

Center for Resource Solutions, San Francisco July 2013 - August 2013
Green-e Verification Associate

- Assisted with Green-e Energy's annual verification process, which certifies renewable energy products, by tracing the supply chain back to the source of generation.

Alliance to Save Energy's PowerSave Campus Program, Berkeley October 2011 – August 2013
Project Coordinator

- Coordinated projects to realize actual and potential energy savings in UC Berkeley campus buildings and residence halls.

UC Berkeley Engineering Student, Berkeley February 2013 - May 2013
Private tutor

- Assisted student with material comprehension for the course E7: Introduction to Computer Programming for Engineers.