

# Alex Sor Kang

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## EDUCATION

### University of California, Berkeley

Expected Graduation: May 2016

*Applied Mathematics in Computer Science*

- **Relevant Courses:** Software Engineering, Algorithms, Data Structures, Computer Security, Artificial Intelligence, Network and Internet Architecture, Computer Architecture, Numerical Analysis

## SKILLS

- **Programming:** Javascript (Node), Python, Ruby on Rails, HTML, CSS, Java, C
- **Software/Hardware:** A+ certification, Intel SSE Intrinsics, OpenMP multithreading, Nvidia CUDA, LaTeX

## EXPERIENCE

### Douglas Labs (UCSF)

May 2015 – Aug 2015

*Software Engineering Intern*

- Worked on a virtual lab that makes day-to-day lab tasks possible remotely through a virtual reality system.
- Used the NodeJS and Express stack to develop micro services that communicate with the lab's API database.
- Worked closely with a 3d scanner to scan and import lab assets and wrote scripts in the Unity3d engine.

### Cashify

May 2013 – Jan 2014

*Programming Development Intern*

- Worked in a team of 5 to create multiple web-based applications using Javascript to aid in financial literacy.
- Designed the animation sequences for the applications utilizing the online Collie JavaScript API.

### Pioneers in Engineering

Feb 2013 – May 2013

*Mentor*

- Mentored 4 high-school students for a semester long robotics competition at UC Berkeley.
- Aided in the programming of a robot using C# to navigate through a maze and other functions.

## PROJECTS

- **TSP Approximation** - Competed against a class of over 500 people for the best traveling salesman problem approximation algorithm and graph.
- **Bitcoin** - Recreated the popular bitcoin currency, mined bitcoins, and stole transactions of other users.
- **Anonymous Chatroom** - Used Tor to create a chatroom that ensures anonymity for all users.
- **alexsorkang.github.io** - Regularly updated personal website containing more information about me.
- **Pacman** - Minmax/expectimax, MDP iterations, Q-learning, particle filtering and other AI for game sprites.
- **CPU design** - Designed a 2-stage pipelined processor (ALU, Control Unit, and CPU) using Logism.
- **Enigma** - Replicated the WWII encryption/decryption device using multiple mappings and a secret key
- **Firewall** - A firewall capable of dropping or denying various packet types based on a set of custom rules which includes country, IP, port, packet type, and domain name for DNS packets.
- **Markuproom** - Used NodeJS with Socket.io for a real-time html/css appender with a chatroom style layout.
- **Connect Four (mapreduce)** - Recreated the popular connect four-board game and its AI. Used Amazon Web Service to run the map reduce for the min/max AI.
- **Image Recognition** - Developed and parallelized (Intel SSE, Nvidia CUDA and OMP) image recognition through transformation and translation comparisons.
- **Transport Protocol** - Simplified reliable transport protocol that deals with loss corruption, reordering duplication, delay. Also capable of fast retransmit and selective acknowledgement.