Siddharth Karamcheti

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Education

University of California, Berkeley, Berkeley, CA — Aug 2014 - 2018 (Expected)
Regent's and Chancellor's Scholar. Cumulative GPA: 3.8
Major(s): Electrical Engineering and Computer Science, English (tentative)

Completed coursework:
CS 61A: A Structure and Interpretation of Computer Programs
Math 54: Linear Algebra and Differential Equations
CS 70: Discrete Mathematics and Probability Theory
Religious Studies C165: Hindu Mythology

Current coursework:
CS 61B: Data Structures
EE 16A: Designing Information Devices and Systems
English R1B: Research Methods in Literature
(NLP, Statistical Analysis, Formal Logic, Probability)
English 180A: Autobiographical Disability

Henry M. Gunn High School, Palo Alto, CA — 2010 - Jun 2014
Cumulative GPA: 4.0 unweighted, 4.4 weighted

Relevant STEM coursework:
AP Computer Science
AP BC Calculus
AP C Physics (Mechanics)
AP C Physics (Electricity and Magnetism)

Other relevant coursework:
AP English Literature
AP Spanish Language
AP Spanish Literature
AP Economics (Micro and Macro)

Work Experience

- CS 61A, University of California - Berkeley — Jan 2015 - Present
  Group Tutor/Teaching Assistant
- UC BEACON Project, UC Berkeley Department of Chemistry — Jan 2015 - Present
  API/Database Engineer, Backend Developer
- AutoGrid Systems, Redwood City — Jun – Nov 2013
  Software Development/Research Intern
- Gunn Robotics Team, Henry M. Gunn High School, Palo Alto — Aug 2012 - May 2014
  Leader, Controls and Electronics

Research Experience

- Par Lab (Programming Languages), University of California - Berkeley — Jan 2015 - Present
  Researching Probabilistic Programming Languages, Parser-Generators, and Compiler Optimization under the supervision of Professor Ras Bodik.
- Haas Business School, University of California - Berkeley — Aug 2014 - 2015
  Big Data scraping, Machine Learning, and Statistical Analysis of emerging money markets.
- California State Summer School for Mathematics and Science **(COSMOS)** — Jun - Aug 2012
  University of California, Davis. Acceptance rate: 200 out of 900+ applicants.
  Cluster: Mathematical Modeling of Biological Systems

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Computer Skills

- Programming Languages/Technologies: Python, Haskell, Java, Scheme, Racket
- Frameworks/Libraries: Python NLTK, Python Pandas, Numpy, iPython Notebook, Multiprocessing, Celery, Hadoop/HBase (MapReduce, Hadoop Streaming), SQL, wpiLib (Robotics Library).
- Web Frameworks: Node.js, Python webapp2, flask

Leadership and Volunteering

- Tutor for CS 61A (1200 person class), Jan 2015 - Present
- Officer of Hackers@Berkeley, Aug 2014 - Present
- Controls and Programming Lead, Gunn Robotics Team 2012 - 2014
- Policy Debate Captain, Henry M. Gunn High School Speech and Debate team, 2010-2013
- High School Student Tutor – Math, Science, Spanish, Physics, 2010-2014

Sample Projects

Miscellaneous projects can be found here: http://github.com/siddk

Par Lab

- CYK Parser
  - Implemented the Cocke-Younger-Kasami Algorithm for Context-Free Grammars in Racket, as part of my work with parser-generators in the Par Lab. Code can be found here: https://github.com/siddk/cyk-parser

CS 61A

- Twitter-Trends Sentiment
  - During CS 61A of Fall 2014, my partner Ulysse Carion and I built an extension on the Twitter Trends project (found here: http://www-inst.eecs.berkeley.edu/~cs61a/fa14/proj/trends/), a Sentiment Classifier built using the NLTK library in Python, with a working API. Trained on the default NLTK corpus, it categorizes sentences as "positive" or "negative."
  - Full project can be found here: https://github.com/siddk/trends-sentiment

AutoGrid Systems

- Demand Response Optimization
  - Research report written regarding an algorithm for Demand Response optimization in a power grid, for applications to outage prevention and detection in third world countries.
  - Paper can be found here: http://siddk.github.io/papers/intel.pdf

Gunn Robotics

- FIRST Robotics 2013 Game Ultimate Ascent – Team 192
  - Utah Championship Video: https://www.youtube.com/watch?v=3U8P4qWLWhY
- FIRST Robotics 2014 Game Aerial Assist – Team 192

COSMOS

- Researched the use of the Fitzhugh-Nagumo Mathematical Model for Cardiac Action Potentials.
  - Paper can be found here: http://cosmos.ucdavis.edu/archives/2012/cluster9/KARAMCHETI_SIDDHARTH.pdf