Callen O. Rain

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EDUCATION

Swarthmore College   EXPECTED GRADUATION IN MAY 2015
Candidate for B.A. in Computer Science with Minors in Mathematics and Engineering
Grade Point Average: 3.83 (overall) 3.88 (major)

Computer Science Courses:	Natural Language Processing, AI, Algorithms, SICP, Data Structures and Algorithms
Mathematics Courses:	Real Analysis, Linear Algebra, Discrete Mathematics, Several Variable Calculus
Engineering Courses:	Fundamentals of Digital Systems, Electrical Circuit Analysis, Computer Architecture

TECHNICAL SKILLS

Computer Languages (Proficient):	Python, C/C++, HTML, CSS
Computer Languages (Familiar):	Ruby, JavaScript, Racket, Haskell, Bash, MIPS Instruction Set
Operating Systems:	Linux, Windows, Mac OSX
Toolbox:	Ruby on Rails, Git, RSpec, LaTeX, jQuery, Heroku

PROJECT EXPERIENCE

Lectern.co - Co-founder, Developer   FALL 2012 - PRESENT
· Write backend software in Ruby on Rails for this RSS reading platform, including article parsing, authentication, and security
· Implement user interface features using HTML, JavaScript, and CSS, including a sharing system and comment forum
· Monitor database performance, scalability issues, and site reliability while troubleshooting problems quickly

Amazon Review Model   SUMMER 2013
· Downloaded and organized thousands of reviews of popular products from Amazon, a large online retailer
· Used probabilistic machine learning in Python to build a classifier that detects the emotional sentiment of the reviewer

Smart Connect4   FALL 2012
· Wrote a Connect4 game in C where the user can play another human or a computer opponent on multiple difficulty settings
· Computer player uses a variable-depth minimax AI algorithm to score future game states and pick the optimal move

Racket Interpreter   SPRING 2013
· Built a meta-circular read-eval-print-loop interpreter in Racket using knowledge of functional programming techniques
· Designed the interpreter so that it can execute Racket programs of substantial complexity, including itself as an input

WORK EXPERIENCE

Swarthmore College Department of Engineering   SUMMER 2013
Summer Research Assistant   Swarthmore, PA
· Created an application support layer in C to facilitate benchmarking on the VirtualSoC prototyping platform written in C++
· Ported parallel benchmarks to VirtualSoC to test transactional memory research advances
· Wrote a parallel shared memory allocator for VirtualSoC, balancing speed and fragmentation to improve performance

Swarthmore College   FALL 2012 - PRESENT
Student Academic Mentor   Swarthmore, PA
· Advise peers on course selection, test taking / notetaking strategies, reading skills; hold weekly office hours
· Serve as liason between resident students and the Deans Office on academic matters

NASA Goddard Applied Optics and Detection Lab   2010 - 2011
Intern   Greenbelt, MD
· Built a proof-of-concept two-way asynchronous laser transponder to measure short distances using diode lasers and detectors
· Modeled the precision of the system using LabView and waveform analysis equipment

INTERESTS & ACTIVITIES

Grader / Tutor, Swarthmore College Departments of Physics, Math, and CS (Swarthmore, PA)	FALL 2012 - PRESENT
Student Representative, Informational Technology Services Committee (Swarthmore, PA)	FALL 2013 - PRESENT
Volunteer, Philabundance Food Distributor (Philadelphia, PA)	FALL 2012 - PRESENT