Chester Holtz

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Summary

I am a sophomore at the University of Rochester studying computer science and mathematics. I am interested in investing myself in projects which present challenges in science and technology and that are useful and interesting to people. I am not afraid of learning new concepts and trying new ideas in the process.

Skills

• **Programming Languages**: Proficient in JAVA, C, Lisp, Python, HTML/CSS, JavaScript, SQL, LaTeX

• **Programming Tools**: Git, Bash, VIM, Eclipse, Matlab, Mathematica, Excel

Education

University of Rochester - Rochester, NY

• Honors Bachelor of Science, Computer Science (2017)

• Bachelor of Arts, Mathematics (2017)

Work History

Visual Intelligence & Social Media Analytics (VISTA) Research Assistant, 12/2014 - current

• Working as a Research Assistant supporting Professor Jiebo Luo's research group in projects involving computer vision, big data analysis, data mining, and machine learning. Currently, I am helping to develop software to assist in the diagnosis of Autism Spectrum Disorder.

Art of Computer Science TA, 09/2014 – 06/2015

• Teaching a lab-based class for students learning about programming to solve math and science problems. Responsibilities include biweekly labs where I enforce concepts established in lectures and students work on problems I have selected.

Select Academic Experiences

Computer Science and Mathematics

• *Data Structures and Algorithms* Studied efficient data structure handling and their implementations. Worked with Prim's, Dijkstra's, A*, BSTs.

• *Computational and Formal Systems* Introduced to the study of formal language theory, lambda calculus, and first order predicate calculus.

• *Computer Systems and Organization* Gained knowledge of system optimization techniques via study of compiler structure, memory management, and manual register handling. Developed UNIX job manager shell, debugged compiled binary files, implemented own version of dynamic memory allocator in C.

• *Artificial Intelligence* Studied algorithms pertaining to the analysis of large sets of data. Implemented various clustering and classification algorithms such as Hierarchical, K-Means, KNN, and SVM. Performed analysis on decision trees and was exposed to neural networks, Bayesian networks and deep learning.

• *Undergraduate Problem Seminar* Delved into honors-level research by studying trending problems in computer science. Final project involved submitting a critique of a research publication attempting to prove the existence of a polynomial time solution to the clique problem.

• *Web Programming* Implemented a modern website in Python's Flask utilizing trending technologies such as bootstrap, Ajax, and SQLite.

• *Discrete Mathematics*

• *Honors Calculus I, II, III*

• *Honors Linear Algebra and Differential Equations*

Select Projects

PredPrey

• Visualization of swarming systems based on the movements of a predatory creature. Swarm interactions based on model developed with differential equations. Implemented in C# with the Unity3d engine.

N-Body

• Computation and visualization of force-vectors on n-bodies in 2d and 3d space. Analysis done on naïve and estimation-based algorithms. Project initially developed in JavaScript with the Processing Library with a port to C focusing on distributed computation.

Kumquat

• Job and hobby scheduling web application with elements of a social network. Built in Python with the Flask web framework. Utilized trending technologies such as AJAX and SQL relational databases to build the social network.

Lisp GC

• Performed analysis and wrote academic paper on three classic garbage collection algorithms. Implemented parser, evaluator, REPL etc. and 3 garbage collectors – Cheney's algorithm, Mark-Sweep with Tri-color marking, and Knuth's classical Lisp 2 algorithm in C++.

Select Academic Papers

A Refutation of the Clique-Based P=NP Proofs of LaPlante and Tamta-Pande-Dhami (Arxiv: 1504.06890)

Comparative Analysis of Classic Garbage-Collection Algorithms for a Lisp-like Language (Arxiv: 1505.00017)

Honors

• Awarded Dean's Scholarship for past leadership and academic achievements at U of R

Other Interests and Activities

• Wrestling, reading science fiction, backpacking (National Outdoor Leadership School (NOLS) graduate)

• RocHack (http://rochack.org/) participant