Chester Holtz

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Summary

I am a junior 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**: JAVA, C, Lisp, Python, HTML/CSS, JavaScript, SQL, Matlab

• **Programming Tools**: Git, Bash, VIM, Eclipse, Excel, LaTeX, Mathematica, limited GDB experience

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. In the past, I have helped to develop software to assist in the diagnosis of Autism Spectrum Disorder.

Data Structures Workshop Leader, 09/2015 – current

• Leading a discussion-based class for students learning about data structures and algorithms. Responsibilities include weekly workshops where I give lectures on topics determined by a syllabus and students work on exercises I have selected.

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

• Taught a lab-based class for students learning about programming to solve math and science problems. Responsibilities included biweekly labs where I enforced concepts established in lectures and students worked on problems I selected.

Select Academic Experiences (Computer Science and Math)

• *Computer Systems and Organization* Studied optimization techniques via study of compiler structure, memory management, and manual register handling.
• *Artificial Intelligence* Studied algorithms pertaining to the analysis of data sets. Implemented various clustering, classification and learning algorithms
• *Undergraduate Problem Seminar* Delved into honors-level research by studying trending problems in computer science.
• *Principles of Web Applications* Implemented a modern website in Python's Flask utilizing trending technologies such as bootstrap, Ajax, and SQLite.
• *Data Mining (current)* Studying concepts & techniques of data mining. Doing research on relationship between online profile & happiness.
• *Programming Language Design and Implementation (current)* Studying fundamental concepts of language, compilation/interpretation, and paradigms.
• *Design and Analysis of Efficient Algorithms (current)* Studying various topics and approaches to problems in CS: DP, graph, divide-and-conquer, etc.
• *Discrete Mathematics, Introduction to Probability, 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 and ported to JavaScript with the Processing.js library.

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.js library and ported to C with a focus 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 Machine Learning-based Approach to Autism Spectrum Disorder Detection from Semi-Structured and Unstructured Medical Data (AAAI-16)
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
• U of R Deans List
• Ranked second in division at JPM Chase Code for Good for a meteor.js application designed to assist volunteers in collecting and visualizing signatures at events and advertising their purpose.

Other Interests and Activities

• Wrestling, science fiction, backpacking (National Outdoor Leadership School (NOLS) graduate)
• RocHack (http://rochack.org/) participant