James E. Daly

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Address

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Bedford, MA 01730
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Research Interests

Pedagogy, Algorithms, Networking, Security

Education

Michigan State University, East Lansing, MI..... August 2017
Doctor of Philosophy: Computer Science
Thesis: Divide and Conquer: Packet Classification by Smart Division
Advisor: Eric Torng
GPA: 3.95/4.0

Hope College, Holland, MI ..... June 2008
Bachelor of Science: Engineering and Computer Science
Minor: Mathematics
GPA: 3.77/4.0

Honors and Awards

Faculty Award for Teaching Excellence (2022)
Boundy Computer Science Award (2008)
Phi Beta Kappa (2008)
Sigma Xi research award (2008)
Russell J. Kraay Award in Computer Science (2006, 2007)
Byrd Scholar (2004)
Eagle Scout (2003)

Conference Publications

James Daly and Eric Torng. "ByteCuts: Fast Packet Classification by Interior Bit Extraction." *IEEE Conference on Computer Communications (**INFOCOM**),* Honolulu, Hawaii. April 2018

James Daly and Eric Torng. "TupleMerge: Building Online Packet Classifiers by Omitting Bits." *International Conference on Computer Communications and Networks (**ICCCN**),* Vancouver, Canada. July 2017

Sorrachai Yingchareonthaworchai, **James Daly**, Alex Liu, and Eric Torng. "A Sorted Partitioning Approach to High-Speed and Fast-Update OpenFlow Classification." *IEEE International Conference on Network Protocols (**ICNP**)*, Singapore. Nov 2016

James Daly, Alex Liu, and Eric Torng. "A Difference Resolution Approach to Compressing Access Control Lists." *IEEE Conference on Computer Communications (**INFOCOM**)*, Turin, Italy. April 14-19, 2013

James Daly, Jacob Brown, and Juyang Weng. "Neuromorphic Motivated Systems". *International Joint Conference on Neural Networks (**IJCNN**)*, San Jose, CA. pp 2917-2924. July 31-Aug 5, 2011.

Journal Publications

James Daly et. al. "TupleMerge: Fast Software Packet Processing for Online Packet Classification". *Transactions on Networking*, vol 27, issue 4, 2019.

S. Yingchareonthaworchai, James Daly, Alex Liu, and Eric Torng. "A Sorted Partitioning Approach to High-Speed and Fast-Update OpenFlow Classification.", *Transaction on Networking*, vol 26, issue 99, 2018

J. Daly, A. Liu, and E. Torng, , "A Difference Resolution Approach to Compressing Access Control Lists.", *Transactions on Networking*, vol. 24, issue 99, 2015

J. Weng, S. Paslaski, J. Daly, C. VanDam, and J. Brown. "Modulation for Emergent Networks: Serotonin and Dopamine". *Neural Networks*, vol. 41, pp. 225-239, 2013.

Related Experience

Assistant Teaching Professor, Department of Computer Science, UML, Fall 2019-Present
Taught a 1000-level introduction to programming course in C, a sequence of two 4000-level software engineering courses, and a seminar for freshmen CS students. Responsibilities include giving lectures for classes of up to 50 students, designing class projects and exams, advising undergraduate students, and managing undergraduate TAs and undergraduate and graduate student graders.

Academic Specialist / Teaching Specialist, Department of Computer Science and Engineering, MSU, Fall 2017-2019
Taught a 200-level discrete mathematics class, a 300-level data structures and algorithms class, and a 400-level software engineering class. Responsibilities included giving lectures for classes of up to 240 students, designing class projects and exams, and managing several teaching assistants. The software engineering class includes multiple writing assignments and a group term project.

Research Assistant, Department of Computer Science and Engineering, MSU, 2009-2017
Primary work involves developing algorithms to reduce packet classifiers and firewall sizes to enable them to fit into smaller TCAM chips or reduce search times. Created an algorithm that improves on both existing theoretical bounds and experimental results. Mentored two other graduate students and an undergrad professorial assistant.

Teaching Assistant, CSE 260, *Discrete Structures in Computer Science*, MSU, Fall 2015 – Spring 2017
Taught recitation sections for a class on logic, proofs, and discrete math. Shared grading responsibilities with two other teaching assistants.

Instructor, CSE 331, *Algorithms and Data Structures*, MSU, Spring 2015
Taught a class on abstract data structures, including linked lists, binary search trees, and hash tables, and the algorithms that act upon them. Prepared and gave lectures, assigned homework and projects, and managed a teaching assistant grader. The projects were done in C++.

Teaching Assistant, CSE 331, *Algorithms and Data Structures*, MSU, Fall 2014
Responsible for designing and grading programming projects where students implemented and utilized various abstract data structures including linked lists, binary search trees, and weighted graphs. The projects were done in C++.

Instructor, CSE 260, *Discrete Structures in Computer Science*, MSU, Summer 2014
Taught a class on logic, proofs, and discrete math to computer science students. Prepared and gave lectures, assigned homework, and managed a teaching assistant grader.

Teaching Assistant, CSE 260, *Discrete Structures in Computer Science*, MSU, Spring 2014
Taught a recitation section for a class on logic, proofs, and discrete math. Responsible for grading quizzes.

Summer Intern, MIT Lincoln Laboratory, May 2013 – August 2013
Implemented several software packet classifiers and tested their efficiency on an enterprise network.

Teaching Assistant, CSE 335, *Object-Oriented Software Design*, MSU, Spring 2010
Responsible for grading homework and projects and for help rooms for the design patterns class. The class was taught in C++.

Teaching Assistant, CSE 101, *Computing Concepts and Competencies*, MSU, Fall 2009
Taught Word, Excel, Access, and HTML / CSS to non-major students.

Software Developer, TechSmith Corp, July 2008 – August 2009
Worked as a software developer for the *Morae* usability suite. Added features such as the ability to upload recorded videos to screencast.com and to log tasks with a Nintendo Wii remote.

Undergraduate Research, Computer Science Department, Hope College, Summer 2007
Interdepartmental work with the math department to model the graph pebbling problem and rapidly generate and solve problem instances, suggesting theoretical results to prove.

Undergraduate Research, Computer Science Department, Hope College, Summer 2006
Investigated how using hyperlinks to cluster internet search results could provide a more diverse set of returned results.

Tutor, Academic Support Center, Hope College, Fall 2004 – Spring 2008
Met with students one-on-one to help with subjects such as general physics, calculus, and solid mechanics.

Service

CS Curriculum Committee, UML, Fall 2019 – Present
Served on the computer science undergraduate curriculum committee.

Faculty Club Advisor, UML ACM, UML, Fall 2019 – Present
Served as the faculty advisor to the UMass Lowell student chapter of the Association of Computing Machinery

Faculty Advocate, RHSA, Fall 2021 – Present
Served as a faculty advocate for first-generation college students in the Kennedy College of Science as UML.

Faculty Club Advisor, Game Dev Club, UML, Fall 2019 – Spring 2021
Served as the faculty advisor to the UMass Lowell Game Development Club.

Department Steward, Graduate Employees Union (GEU), MSU, Sept 2013-Aug 2016
Served as a liaison between the CS graduate students and the TA union, bringing the needs of the CS department to the attention to the union and keeping the department appraised of union activities. Helped plan union activities.

Courses Taught

Computing I	Computing IV	Software Engineering
Discrete Mathematics	Computing II	

Programming Languages

- Scala
- C#
- VB.Net
- Java
- F#
- C++
- Python
- C