Adam Heath Cannon

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Research Interests

Computer science education; machine learning; statistical pattern recognition; computational statistics; data mining; randomized algorithms; approximation algorithms.

Education

Johns Hopkins University (Baltimore, Maryland)
- Ph.D. in Applied Mathematics, 2000.
  Thesis title: *Approximate Distance Methods in Classification.*
  Thesis Advisors: Lenore J. Cowen and Carey Priebe
- M.A. in Applied Mathematics, 1997.

University of California, Los Angeles
- M.S. in Aerospace Engineering, 1994.
- B.S. in Aerospace Engineering, 1991.

Professional Experience

- Senior Lecturer in Computer Science, Department of Computer Science, Columbia University (July, 2013- present)

- Lecturer in Computer Science, Department of Computer Science, Columbia University (July, 2008-June, 2013)

- Assistant Professor, Department of Computer Science, Columbia University (July, 2000-June, 2008)

- Visiting Scientist, Modeling, Algorithmics and Informatics Group (CCS-3), Los Alamos National Laboratory (Summers 2000, 2001, 2002, 2003 and 2004)

Teaching Experience

- Department of Computer Science, Columbia University (2000-present). Designed and instructed: *Introduction to Computer Science (for majors), Computing in Context (for non-majors), Introduction to Computing for Engineers and Applied Scientists, Introduction to Information Science.* Instructed: *Machine Learning, Introduction to Computers (for non-majors), Introduction to Information Science, Analysis of Algorithms, Linear Algebra for Computer Scientists (Scientific Computation II), Discrete Mathematics,*
- Winner of the *2016 Presidential Award for Outstanding Teaching*, Columbia University
- Winner of the *2016 Great Teacher Award*, Society of Columbia Graduates, Columbia University.
- Winner of the *2009 Columbia University Department of Computer Science Faculty Teaching Award*
- Winner of the *2002 Columbia SEAS Alumni Association Distinguished Faculty Teaching Award*.

- Teaching Fellow, Department of Mathematical Sciences, Johns Hopkins University (fall 1999), Instructor for two undergraduate level courses: *Discrete Mathematics* (approximate enrollment: 120) and *Linear Algebra and Differential Equations* (approximate enrollment: 50).

Selected Publications

- C. Murphy, R. Powell, K. Parton, A. Cannon, "Lessons Learned from a PLTL-CS Program", *Proceedings of the 42nd ACM SIGCSE Technical Symposium on Computer Science Education,* 2011.
- C. Murphy, E. Kim, G. Kaiser, A. Cannon, "BackStop: A tool for Debugging Runtime Errors", *Proceedings of the 29th ACM SIGCSE Technical Symposium on Computer Science Education,* 2008.
- A.H. Cannon , D.R. Hush, "Multiple Instance Learning using Simple Classifiers", *Proceedings of the International Conference on Machine Learning and Applications*, 2004.
- A.H. Cannon, L. Cowen, "Approximation algorithms for the class cover problem ", *Annals of Mathematics and Artificial Intelligence*; 40:3(March): 215-223, 2004.
- A.H. Cannon, J.W. Howse, D.R. Hush, J.C. Scovel, "Learning with the Neyman-Pearson and min-max criteria", Los Alamos National Laboratory Technical Report No. LAUR-02-2951, 2002.
- A.H. Cannon, J. W. Howse, D.R. Hush, J.C. Scovel, "Simple Classifiers", Los Alamos National Laboratory Technical Report No LAUR-03-0193, 2003.
- A.H. Cannon, J.M. Ettinger, D.R. Hush, J.C. Scovel, "Machine learning with data dependent hypothesis classes", *Journal of Machine Learning Research*; 2(Feb): 335-358, 2002.
- A.H. Cannon, L.F. James, C.E. Priebe, "Approximating the posterior via the nearest neighbor regression", Technical Report No. 612, Department of Mathematical Sciences, Johns Hopkins University, Baltimore, MD 21218.
- A.H. Cannon, L. Cowen, and C. E. Priebe, "Approximate distance classification", *Computing Science and Statistics*, 30: 544-549, 1998.
- A.H. Cannon, "Approximate distance methods in classification", *Ph.D. Thesis*, Department of Mathematical Sciences, Johns Hopkins University, May 2000.

Other Awards

- *Columbia Collaboratory Fellow*
  145K, 2016
  Computational literacy for Public Policy, joint with SIPA
- *Provost's Hybrid Learning Course Redesign Award*
  9K, 2014
  Funds used to design an innovative cross-disciplinary hybrid course, to teach computing to liberal arts majors.
- *Google CS4HS*
  20K, 2011
  Gift used to fund a summer workshop for high school teachers. The workshop was designed to give high school math and science teachers tools to inject computer science concepts into existing high school math and science courses.
- *NCWIT Academic Alliance Seed Fund*
  (With Chris Murphy and Kristen Parton) 15K, 2008
  Used to begin the Emerging Scholars Program at Columbia Computer Science. This program is a peer-led team learning style seminar designed to attract and retain women in the major.

Professional Memberships

The Institute for Electrical and Electronics Engineers
Association for Computing Machinery