

John Cavazos

Computer & Information Sciences Department

University of Delaware

Newark, DE 19716, USA

cavazos@udel.edu

<https://www.eecis.udel.edu/~cavazos/>

(302) 831-2712

I am an associate professor in the [Computer and Information Sciences Department](#) and a JP Morgan Chase Faculty Fellow in the [Institute for Financial Services Analytics](#). I also have a joint appointment in the [Electrical and Computer Engineering Department](#). My research interests are in high-performance computing, machine learning, predictive analytics, and application of these technologies to hard problems.

I was one of the first researchers to work on applying machine learning to improve compilers. This field of research has rapidly grown to include hundreds of authors from many major universities and technology companies. Compilers typically contain many heuristics to solve hard problems approximately and efficiently. Finding heuristics that perform well on a broad range of applications and processors is one of the most complex tasks faced by compiler writers. My research involves using machine learning techniques to automatically construct compiler optimization heuristics. I have shown that this technique can completely eliminate the human from heuristic design. My research on applying machine learning to compiler optimizations received the NSF CAREER award.

John Cavazos

[Compilers](#), [Machine Learning](#), [GPUs](#), [parallel programming](#)
在 udel.edu 的电子邮件经过验证

创建我的个人资料

引用指数	总计	2012 年至今
引用	1875	1093
h 指数	21	18
i10 指数	30	24

200920102011201220132014201520162017

标题 1 - 20	引用次数	发表年份
Using machine learning to focus iterative optimization	338	2006

标题 1 – 20	引用次数	发表年份
F Agakov, E Bonilla, J Cavazos, B Franke, G Fursin, MFP O'Boyle, ... Proceedings of the International Symposium on Code Generation and ...		
Rapidly selecting good compiler optimizations using performance counters J Cavazos, G Fursin, F Agakov, E Bonilla, MFP O'Boyle, O Temam Proceedings of the International Symposium on Code Generation and ...	185	2007
Iterative optimization in the polyhedral model: Part II, multidimensional time LN Pouchet, C Bastoul, A Cohen, J Cavazos ACM SIGPLAN Notices 43 (6), 90-100	145	2008
Auto-tuning a high-level language targeted to GPU codes S Grauer-Gray, L Xu, R Searles, S Ayalasomayajula, J Cavazos Innovative Parallel Computing (InPar), 2012, 1-10	119	2012
Method-specific dynamic compilation using logistic regression J Cavazos, MFP O'boyle ACM SIGPLAN Notices 41 (10), 229-240	98	2006
Inducing heuristics to decide whether to schedule J Cavazos, JEB Moss ACM SIGPLAN Notices 39 (6), 183-194	87	2004
Fast compiler optimisation evaluation using code-feature based performance prediction C Dubach, J Cavazos, B Franke, G Fursin, MFP O'Boyle, O Temam Proceedings of the 4th international conference on Computing frontiers, 131-142	66	2007
Automatic performance model construction for the fast software exploration of new hardware designs J Cavazos, C Dubach, F Agakov, E Bonilla, MFP O'Boyle, G Fursin, ... Proceedings of the 2006 international conference on Compilers, architecture ...	63	2006
Midatasets: Creating the conditions for a more realistic evaluation of iterative optimization G Fursin, J Cavazos, M O'Boyle, O Temam International Conference on High-Performance Embedded Architectures and ...	61	2007

标题 1 – 20	引用次数	发表年份
Automatic tuning of inlining heuristics J Cavazos, MFP O'Boyle Proceedings of the 2005 ACM/IEEE conference on Supercomputing, 14	59	2005
Predictive modeling in a polyhedral optimization space E Park, J Cavazos, LN Pouchet, C Bastoul, A Cohen, P Sadayappan International journal of parallel programming 41 (5), 704-750	53	2013
Using predictivemodeling for cross-program design space exploration in multicore systems S Khan, P Xekalakis, J Cavazos, M Cintra Proceedings of the 16th International Conference on Parallel Architecture ...	53	2007
Learning to schedule straight-line code JEB Moss, PE Utgoff, J Cavazos, D Precup, D Stefanovic, C Brodley, ... NIPS 97, 929-935	51	1997
Mitigating the compiler optimization phase-ordering problem using machine learning S Kulkarni, J Cavazos ACM SIGPLAN Notices 47 (10), 147-162	47	2012
MPI-aware compiler optimizations for improving communication-computation overlap A Danalis, L Pollock, M Swany, J Cavazos Proceedings of the 23rd international conference on Supercomputing, 316-325	40	2009
Intelligent selection of application-specific garbage collectors J Singer, G Brown, I Watson, J Cavazos Proceedings of the 6th international symposium on Memory management, 91-102	38	2007
A transactional memory with automatic performance tuning Q Wang, S Kulkarni, J Cavazos, M Spear ACM Transactions on Architecture and Code Optimization (TACO) 8 (4), 54	37	2012
An evaluation of different modeling techniques for iterative compilation E Park, S Kulkarni, J Cavazos Proceedings of the 14th international conference on Compilers, architectures ...	36	2011

标题 1 – 20	引用次数	发表年份
Using graph-based program characterization for predictive modeling E Park, J Cavazos, MA Alvarez Proceedings of the Tenth International Symposium on Code Generation and ...	27	2012
Software Automatic Tuning: Concepts and State-of-the-Art Results R Suda, K Naono, K Teranishi, J Cavazos Software Automatic Tuning, 3-15	27	2011

展开