

Benjamin (Ben) W. Priest

CONTACT INFORMATION	Graduate Student	<i>Cell:</i> +1-937-681-1935
	Thayer School of Engineering Dartmouth College	<i>Fax:</i> +1-603-646-3856 <i>E-mail:</i> benjamin.w.priest.th@dartmouth.edu
PROFESSIONAL INTERESTS	Efficient analysis of large, dynamic datasets: streaming algorithms, sketching, machine learning, graph algorithms, numerical linear algebra, compressed sensing, high performance computing, graph theory, optimization, network analysis, and natural language processing	
EDUCATION	Thayer School of Engineering at Dartmouth College , Hanover, VT, USA	
	Ph.D., Engineering (GPA 4.0)	09/2015 – 12/2018 (Projected)
	<ul style="list-style-type: none"> - Advisor: Professor George Cybenko - Thesis: Sublinear Approximations of Vertex Centrality in Evolving Graphs - Demonstrated novel, sublinear-space sketching algorithms to efficiently estimate local triangle counts and vertex centrality on large, distributed graphs 	
	The Ohio State University , Columbus, OH, USA	
	B.S., Mathematics, (GPA 3.62 <i>Cum Laude</i>)	09/2011 – 06/2011
PROFESSIONAL EXPERIENCE	B.S., Computer and Information Science, (GPA 3.62 <i>Cum Laude</i>)	09/2011 – 06/2011
	Dartmouth College , Hanover, NH, USA	
	Thayer School of Engineering , Advisor: Professor George Cybenko	
	<i>Research and Teaching Assistant</i>	09/2015 – 12/2018 (Projected)
	<ul style="list-style-type: none"> - Developed novel sublinear-space sketching algorithms to estimate popular centrality indices in large distributed graphs - Taught courses in applied machine learning, with an emphasis on deep learning while leading a team of TAs 	
	Lawrence Livermore National Laboratory , Livermore, CA, USA	
	Center for Applied Scientific Computing , Supervisor: Dr. Roger Pearce	
	<i>Computation Student Intern</i>	05/2018 – 12/2018 (Projected)
	<ul style="list-style-type: none"> - Developed and implemented sophisticated communication protocols in a big-data environment in collaboration with the HAVOQGT project - Improved performance of distributed algorithms with irregular computational load 	
	MIT Lincoln Laboratory , Lexington, MA, USA	
	Cyber Analytics and Decision Systems. Supervisor: Dr. Kevin M. Carter	
	<i>Assistant Research Scientist</i>	08/2011 – 07/2015
	<ul style="list-style-type: none"> - Designed and implemented novel machine learning algorithms to reduce human and machine behavior from computer network protocol traffic - Implemented cognitive multi-agent systems to perform high-fidelity network traffic generation for network-scale simulation experiments 	
	Air Force Institute of Technology , Wright-Patterson Air Force Base, OH, USA	
	Program Encryption Group. Supervisor: Professor J. Todd McDonald	
TECHNICAL STRENGTHS	<i>Engineering Technician GS-05</i>	06 – 09, 2008 & 2009
	<ul style="list-style-type: none"> - Developed encryption metrics for circuits using abstract-interpretation semantic models 	
	Languages	Software
	C/C++, Python, Bash, MATLAB, R, Java	Git, Keras and TensorFlow, most editors, L ^A T _E X
	Computing	Interpersonal
	Distributed and parallel algorithms	Teamwork and communication
	Streaming algorithms	Leadership and mentoring
	Applied mathematics	Public speaking and technical communication
	Machine learning & deep learning	

AWARDS	SECRYPT	The Ohio State University
	Best Paper Award, 2018	- Phi Beta Kappa Inductee, 2010
	MIT Lincoln Laboratory	- Bingham Award in Philosophy, 2010
	Lincoln Scholar Program recipient, 2015	- Kenneth Cummings Scholarship, 2008–2011
	- (declined)	- Distinguished Merit Scholarship, 2007–2011
		- Ohio Academic Scholarship, 2007–2011
SELECTED PEER- REVIEWED PUBLICATIONS	[1] Benjamin W. Priest, Roger Pearce, and Geoffrey Sanders. DegreeSketch: Distributed Cardinality Sketches on Graphs, with Applications to Counting Triangles. In <i>Proceedings of the 2018 IEEE International Parallel and Distributed Processing Symposium, IPDPS</i> . [Submitted] . 2019.	
	[2] Benjamin W. Priest, Roger Pearce, and Geoffrey Sanders. You’ve Got Mail: Boosting Performance of Irregular Distributed Workloads using Asynchronous Collectives. [In Preparation]	
	[3] Benjamin W. Priest, Roger Pearce, and Geoffrey Sanders. Estimating Edge-Local Triangle Count Heavy Hitters in Edge-Linear Time and Almost-Vertex-Linear Space In <i>Proceedings of the IEEE High Performance Extreme Computing Conference, HPEC</i> . 2018.	
	[4] Luan Hoy Pham, Massimiliano Albanese, and Benjamin W. Priest. A Quantitative Framework to Model Advanced Persistent Threats. In <i>Proceedings of the 15th International Conference on Security and Cryptography, SECRYPT</i> . 2018.	
	[5] Benjamin Priest, Era Vuksani, Neal Wagner, Brady Tello, Kevin M. Carter, and William W. Streilein. Agent-based simulation in support of moving target cyber defense technology development and evaluation. In <i>Proceedings of the 2015 ACM Spring Simulation Multi-Conference - Communications and Networking Simulation Symposium, SpringSim ’15</i> , 2015	
	[6] Benjamin Priest and Kevin M. Carter. Characterizing latent user interests on enterprise networks. In <i>Proceedings of the Twenty-Seventh International Florida Artificial Intelligence Research Society Conference, FLAIRS 2014, Pensacola Beach, Florida, May 21-23, 2014.</i> , 2014	
	[7] Kevin M. Carter, Rajmonda S. Caceres, and Ben Priest. Latent community discovery through enterprise user search query modeling. In <i>Proceedings of the 37th International ACM SIGIR Conference on Research & Development in Information Retrieval, SIGIR ’14</i> , pages 871–874, 2014. ISBN 978-1-4503-2257-7	
	[8] Kevin Gold, Zachary J. Weber, Ben Priest, Josh Ziegler, Karen Sittig, William W. Streilein, and Mark Mazumder. Modeling how thinking about the past and future impacts network traffic with the GOSMR architecture. In <i>International conference on Autonomous Agents and Multi-Agent Systems, AAMAS ’13, Saint Paul, MN, USA, May 6-10, 2013</i> , pages 127–134, 2013b	
	[9] Ben Priest and Kevin Gold. Utility discounting explains informational website traffic patterns before a hurricane. In <i>22nd International World Wide Web Conference, WWW ’13, Rio de Janeiro, Brazil, May 13-17, 2013, Companion Volume</i> , pages 53–54, 2013	
	[10] Kevin Gold, Ben Priest, and Kevin M. Carter. An expectation maximization approach to detecting compromised remote access accounts. In <i>Proceedings of the Twenty-Sixth International Florida Artificial Intelligence Research Society Conference, FLAIRS 2013, St. Pete Beach, Florida. May 22-24, 2013.</i> , 2013a	