

Vaidy Sunderam

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A. Professional Preparation

Birla Institute of Tech. and Science	Pilani, India	Engineering	B.E., 1978
Indian Institute of Technology	Bombay, India	Computer Science	M.Tech, 1980
University of Kent	Canterbury, UK	Computer Science	Ph.D., 1986

B. Appointments

- Chair, Department of Computer Science, Emory University, 2018-Present
- Chair, Department of Mathematics and Computer Science, Emory University, 2005-2018
- Professor of Computer Science, Emory University, 1996–Present
- Associate Professor of Computer Science, Emory University, 1992–1996
- Assistant Professor of Computer Science, Emory University, 1986–1992

C1. Recent Significant Publications

- Layla Pournajaf, Farnaz Tahmasebian, Li Xiong, Vaidy S. Sunderam: Cyrus Shahabi: “Privacy Preserving Reverse k-Nearest Neighbor Queries.”, *Proc. 19th IEEE Conference on Mobile Data Management (MDM 2018)*, pp. 177-186, Aalborg, Denmark, June 2018.
- Sofia Guzzetti, Tiziano Passerini, Jaroslaw Slawinski, Umberto Villa, Alessandro Veneziani, Vaidy S. Sunderam: “Platform and Algorithm Effects on Computational Fluid Dynamics Applications in Life Sciences”, *J. Future Generation Computer Systems*, 67: 382-396 (2017).
- Daniel A. Garcia-Ulloa, Li Xiong, Vaidy S. Sunderam: “Truth Discovery for SpatioTemporal Events from Crowdsourced Data”, *Proceedings of the VLDB*, 10(11): 1562-1573 (2017).
- Ardavan Afshar, Joyce C. Ho, Bistra Dilkina, Ioakeim Perros, Elias B. Khalil, Li Xiong, Vaidy S. Sunderam: “CP-ORTHO: An Orthogonal Tensor Factorization Framework for Spatio-Temporal Data”, *Proc. 25th ACM SIGSPATIAL Intl. Conf. on Advances in GIS*, Redondo Beach, CA, 2017.
- Jaroslaw Slawinski, Vaidy S. Sunderam: “Adaptive Execution of Parallel Programs on Grids and Clouds”, *Proc. Intl. Conf. Parallel Computing, PARCO 2017*, pp. 595-604, Bologna, Italy, 2017.

C2. Other Significant Publications

- Michael G. Solomon, Vaidy S. Sunderam, Xiong Li, Ming Li: “Mutually Private Location Proximity Detection with Access Control”, *Proc. 31st Annual IFIP Data and Applications Security and Privacy Conference (DBSec 2017)*: pp. 164-184, Philadelphia, PA, July 2017.
- Ivan Zoraja, Goran Trlin, Vaidy S. Sunderam: “Eliciting the End-to-End Behavior of SOA Applications in Clouds”, *Journal of Computing and Informatics*, 35(2): 259-281, 2016.
- Xiaofeng Xu, Li Xiong, Vaidy S. Sunderam, Yonghui Xiao: “A Markov Chain Based Pruning Method for Predictive Range Queries”, *Proc. 24th ACM SIGSPATIAL Intl. Conf. on Advances in GIS*, Burlingame, CA, November 2016.

- Xiaofeng Xu, Li Xiong, Vaidy S. Sunderam: “D-Grid: An In-Memory Dual Space Grid Index for Moving Object Databases”, *Proc. 17th Intl. conf. on Mobile Data Management (MDM 2016)*, pp. 252-261, Porto, Portugal, June 2016.
- Layla Pournajaf, Daniel A. Garcia-Ulloa, Li Xiong, Vaidy S. Sunderam: “Participant Privacy in Mobile Crowd Sensing Task Management: A Survey of Methods and Challenges”, *ACM SIGMOD Record* 44(4): 23-34 (2015)

D. Synergistic Activities

- Founding chair of the Computer Science Department at Emory University, and prior chair of the joint Department of Mathematics and Computer Science. Envisioned strategic plan focusing on Data Science, High-end Computing, and Quantum Computing and currently engaged in planning and proposals to recruit synergistic faculty in these areas. Director of University wide initiative in Computational and Life Sciences involving four schools and 11 departments that established and advanced key strengths in leveraging Cyberinfrastructure for Life Sciences research and education. Catalyzed multiple interdisciplinary faculty recruits and joint postdoctoral positions between Computer Science and other Basic Science departments.
- Promoted STEM curricula and research through: (a) creation of four graduate programs (PhD and MS) in Computer Science and Informatics and Biomedical Informatics; (b) establishment of new undergraduate majors in Applied Math and Statistics, Data Science, and Quantitative Methods; (c) creation of degree programs in Computational Science in collaboration with Science departments; (d) creation of 3-2 undergraduate Computer Science major between Emory and Agnes Scott College for Women, enabling students from the latter to obtain a CS degree from Emory in two years; (e) establishment of interdisciplinary postdoctoral fellowships that are joint across two or more disciplines/PI labs; (f) sponsored extracurricular coding camps for local high school and college students to instill CS skills broadly.
- Committed engagement in broadening participation and increasing diversity in Computer Science and STEM broadly. Conducted faculty search specifically oriented towards increasing diversity and inclusivity, recruiting in three new faculty colleagues from underrepresented minorities in the past two years. Current faculty search has 66% women and minority shortlisted candidates. Created mentoring schemes for junior faculty in formulating their research programs and teaching contributions. Sponsored workshops and educational programs (Math Circle, GWC) for local women and students from underserved communities.
- Developed software systems and tools during the course of experimental research projects that have been widely distributed and adopted by the community. Examples include the PVM metacomputing framework, the EcliPSe system for scientific simulations, and PIOUS for parallel data storage and access. The CCF system was the precursor to several online collaboration and distance interaction software in use today. Recent contributions include the ADAPT toolkit that enables matching of multiple computing paradigms to varied computing platforms, enabling interoperability across clouds, grids, and on-premise resources. Contributions in the realm of data management deal with efficiency in moving-object databases, privacy-preserving crowd-sensing, and trust-based information fusion. Ongoing work on dynamic data-driven adaptive systems seeks to integrate secure and privacy-preserving techniques into data acquisition, aggregation and analytics in systems comprising mobile, regional, and central computing and storage devices.
- Associate Editor, *Journal of Cluster Computing*; Steering Committee Member, Heterogeneous Computing Workshop; Program Chair and Program Committee Member for numerous conferences in High Performance Computing and Distributed Systems; Organizer of workshops on Dynamic Data Driven Systems, Internet of Things, and Smart Systems.