Vijay S. Kumar, Ph.D., Senior Scientist, GE Research

Role/Expertise: Data & knowledge engineering, high-performance data-intensive computing, integrating software platforms across Big Data analytics, ML and semantic reasoning workloads.

Citizenship: United States of America

Clearances: None

Education: The Ohio State University, Ph.D. Computer Science; 2010
The Ohio State University, M.S. Computer Science; 2009
Birla Institute of Technology & Science, Pilani, India, B.E. Computer Science; 2003
Birla Institute of Technology & Science, Pilani, India, M.Sc. Chemistry; 2003

Relevant Experience: Dr. Kumar has over 9 years of expertise in scientific data management and large-scale data-intensive computing. At GE, he has helped shape and execute on a vision for knowledge-driven data management and computation that leverages the power of semantic modeling and reasoning to build better tools for domain experts. He has developed software platforms (integrating modern Big Data and Knowledge Graph technologies) to address diverse data-related challenges in the life sciences, finance, manufacturing and energy systems domains – this includes prior experiences in data flow management and systems integration for the DARPA ASKE program. Vijay holds 2 patents and has co-authored over 35 publications.

Relevant Publications:

[1] V. S. Kumar, K. S. Aggour, P. Cuddihy, J. W. Williams, "A Federated Multimodal Digital Thread Platform for Enabling Digital Twins", ASNE Naval Engineers Journal (technical article), v132(1): 47-56, March 2020.

[2] L. C. Dial, S. Ghosh, N. C. Kumar, V. S. Kumar, V. K. Gupta, T. Hanlon, V. S. Dheeradhada, K. S. Aggour, J. Vinciquerra, "A Physics-informed Data-driven Approach to Additive Manufacturing Parameter Optimization", ASM Advanced Materials & Processes (AMP), v177(7): 16-21, October 2019.

[3] V. S. Kumar, P. Cuddihy, K. S. Aggour, "NodeGroup: A Knowledge-driven Data Management Abstraction for Industrial Machine Learning", Proc. of the 3rd Intl. Workshop on Data Management for End-to-end Machine Learning (DEEM), June 2019.

[4] J. McHugh, P. Cuddihy, J. W. Williams, K. S. Aggour, V. S. Kumar, V. Mulwad, "Integrated Access to Big Data Polystores Through a Knowledge-driven Framework", Proc. of the IEEE Intl. Conference on Big Data, pp. 1494-1503, December 2017.

[5] K. S. Aggour, J. W. Williams, J. McHugh, V. S. Kumar, "Colt: Concept Lineage Tool for Data Flow Metadata Capture and Analysis", Proc. of the VLDB Endowment, v10(12), 1790-1801, August 2017.