Venkata Vamsikrishna Meduri

Research Interests

- Hybrid Search and Generative AI on Vector Databases.
- Query Processing and Optimization in Lakehouse Systems.
- Data Integration and Information Retrieval

Employment History

12/2025 – · · · ·	**Staff Research Scientist.** IBM Research - Silicon Valley.
04/2024 – 12/2025	**Staff Research Scientist.** IBM Research - Almaden.
05/2022 – 04/2024	**Research Scientist.** IBM Research - Almaden.
2017, 2018, 2020, 2021	**Summer Research Intern.** IBM Research - Almaden.
04/2013 – 12/2014	**Member of the Research Group.** SRM Research Institute - Bangalore.
01/2012 – 01/2013	**PhD Student.** CWI - Amsterdam.
12/2010 – 12/2011	**Research Assistant.** National University of Singapore.
07/2007 – 12/2007	**Associate Application Engineer.** Oracle India - Bangalore.

Education

01/2015 – 05/2022 — **Ph.D., Arizona State University** in Computer Science.
Advisor: *Mohamed Sarwat*
Dissertation: *Human-in-the-Loop Machine Learning Systems for Data Integration and Predictive Analytics.*

01/2008 – 12/2010 — **M.S., National University of Singapore** in Computer Science.
Advisor: *Kian-Lee Tan*
Thesis title: *Exhaustive Reuse of Subquery Plans to stretch Iterative Dynamic Programming for Complex Query Optimization.*

07/2003 – 04/2007 — **B.Tech., Vellore Institute of Technology** in Computer Science.
Advisor: *Ranichandra Dharmaraj*
Undergrad Thesis title: *Query Optimization in Multidatabase Systems.*

Selected Publications

1. **V. V. Meduri**, D. Kreismann, R. Barber, and B. Reinwald, "PTO: A workload-driven predictive table optimizer for lakehouse systems," in *ACM SIGMOD*, 2026. DOI: https://doi.org/10.1145/3786681.
2. **V. V. Meduri**, A. Quamar, C. Lei, X. Qin, and B. Reinwald, "Alfa: Active learning for graph neural network-based semantic schema alignment," *VLDB J.*, vol. 33, no. 4, pp. 981–1011, 2024. DOI: 10.1007/S00778-023-00822-Z.
3. **V. V. Meduri**, K. Chowdhury, and M. Sarwat, "Evaluation of machine learning algorithms in predicting the next SQL query from the future," *ACM Trans. Database Syst.*, vol. 46, no. 1, 4:1–4:46, 2021. DOI: 10.1145/3442338.
4. **V. V. Meduri**, A. Quamar, C. Lei, V. Efthymiou, and F. Ozcan, "BI-REC: guided data analysis for conversational business intelligence," *CoRR*, vol. abs/2105.00467, 2021. arXiv: 2105.00467. URL: https://arxiv.org/abs/2105.00467.

5. **V. V. Meduri**, L. Popa, P. Sen, and M. Sarwat, "A comprehensive benchmark framework for active learning methods in entity matching," in *ACM SIGMOD*, 2020, pp. 1133–1147. DOI: 10.1145/3318464.3380597.

6. **V. V. Meduri**, K. Chowdhury, and M. Sarwat, "Recurrent neural networks for dynamic user intent prediction in human-database interaction," in *EDBT*, 2019, pp. 654–657. DOI: 10.5441/002/EDBT.2019.79.

7. S. Ortona, **V. V. Meduri**, and P. Papotti, "Robust discovery of positive and negative rules in knowledge bases," in *ICDE*, 2018, pp. 1168–1179. DOI: 10.1109/ICDE.2018.00108.

8. R. Singh, **V. V. Meduri**, A. K. Elmagarmid, *et al.*, "Synthesizing entity matching rules by examples," *Proc. VLDB Endow.*, vol. 11, no. 2, pp. 189–202, 2017. DOI: 10.14778/3149193.3149199.

9. **V. V. Meduri**, Z. Su, and K. Tan, "A write efficient pcm-aware sort," in *DEXA*, 2012, pp. 86–100.

10. **V. V. Meduri** and K. Tan, "Subquery plan reuse based query optimization," in *COMAD*, 2011, pp. 35–46.

Skills

Coding — Python, Java, C++, SQL, Bash scripting

Awards and Achievements

2026 — **Distinguished PC Award**, ICDE Research Track 2026.

2025 — **IBM Outstanding Technical Achievement Award**, for the delivery of query optimizer in Watsonx.data 2.0 and order of magnitude performance improvement for TPC-DS 100 TBytes on Fusion HCI.

2023 — **Best Reviewer Award**, VLDB PhD Workshop.

IBM First Time Patent Application Invention Achievement Award, for a patent on active learning-based ontology alignment.

2018-19, 2021-22 — **Engineering Grad Fellowship**, from the Ira A. Fulton School of Engineering and the Polytechnic School at Arizona State University for best academic performance.

2017 — **ACM SIGMOD Student Travel Award**

2008-10 — **Research Scholarship**, from the National University of Singapore.

2007 — **Merit Scholarship**, from Vellore Institute of Technology.

Program Committee Member

- ACM SIGMOD Research Track 2027.
- PVLDB Research Track 2026, 2027.
- ICDE Research Track 2026.
- ICDE Industry Track 2024, 2025, 2026.
- PVLDB Research Track 2025 (Rapid Response Reviewer).
- ACM Symposium on Cloud Computing (SoCC) 2023.
- VLDB Industry Track 2023, EDBT Industry Track 2024, 2025.
- VLDB PhD Workshop 2023, Tabular Data Analysis (TaDA) Workshop @ VLDB 2023, 2026.