

Sarvesh Pandey

Assistant Professor, Department of Computer Science (MMV), Banaras Hindu University, Varanasi, India
Fulbright–Nehru Postdoctoral Fellow, University of California, Irvine (Nov 2024 – Nov 2026)

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RESEARCH INTERESTS

Blockchain systems and decentralized ledgers; privacy-preserving data management; database systems and transaction processing; crowdsourcing systems; query processing over IoT and sensor data.

ACADEMIC APPOINTMENTS

- 2024 – 2026 **Fulbright–Nehru Postdoctoral Research Fellow**
Donald Bren School of Information & Computer Sciences,
University of California, Irvine, USA (Host: Prof. Sharad Mehrotra)
- 2020 – present **Assistant Professor**, Department of Computer Science (MMV)
Banaras Hindu University, Varanasi, India

EDUCATION

- 2020 **Ph.D., Computer Science & Engineering**
Madan Mohan Malaviya University of Technology, Gorakhpur, India
Thesis: *Resolving Conflicts amongst Distributed Real-Time Transactions*
Advisor: Prof. Uday Shanker
- 2016 **M.Tech., Computer Science & Engineering**
Madan Mohan Malaviya University of Technology, Gorakhpur, India

HONOURS AND AWARDS

- 2024 **Fulbright–Nehru Postdoctoral Research Fellowship**, United States–India Educational Foundation (USIEF)
- 2014 **All-India Rank 33**, CSIR NET–JRF, Engineering Sciences, Council of Scientific and Industrial Research, New Delhi
- 2014 – 2020 CSIR Junior Research Fellow (JRF) and Senior Research Fellow (SRF)
- 2019 Best Research Poster Award, 3rd Malaviya Research Conclave (MRC-2019), MM-MUT Gorakhpur

CURRENT RESEARCH

At UC Irvine, working with Prof. Sharad Mehrotra on the **TIPPERS** project (Testbed for IoT-based Privacy-Preserving PERvasive Spaces), addressing efficient query processing over heterogeneous sensor data in smart buildings without compromising the privacy of the individuals that data describes. Related directions include data processing in decentralized ledgers over geographically distributed data, access control within blockchain frameworks, blockchain-backed crowdsourcing, and embedding machine learning inside the database engine to accelerate analysis.

PUBLICATIONS

Refereed Conferences

- [C8] Vishal Chakraborty, Youri Kaminsky, Arnav Abhijit Dhariya, Sharad Mehrotra, Felix Naumann and **Sarvesh Pandey**. Inference-Aware & Privacy-Preserving Deletion in Databases. *SeQureDB Workshop, ACM SIGMOD, 2026*. doi:10.48550/arXiv.2604.00326
- [C7] Umesh Bhatt and **Sarvesh Pandey**. On Designing a Compaction Strategy for Enhanced LevelDB Read Performance. *ACM CoDS-COMAD, 2024*. doi:10.1145/3703323.3703707
- [C6] Kamal Kant, **Sarvesh Pandey** and Udai Shanker. A Journey from Commit Processing in Distributed Databases to Consensus in Blockchain. *IEEE International Conference on Data Engineering (ICDE), 2022*. doi:10.1109/ICDE53745.2022.00306
- [C5] **Sarvesh Pandey** and Udai Shanker. Performance Issues in Scheduling of Real-Time Transactions. *26th International Conference on Database Systems for Advanced Applications (DASFAA), Taipei, 2021*. doi:10.1007/978-3-030-73200-4_51
- [C4] Ritesh Kumar Singh, **Sarvesh Pandey** and Udai Shanker. A Non-Database Operations Aware Priority Ceiling Protocol for Hard Real-Time Database Systems. *ICCCNT, IIT Kanpur, 2019*. doi:10.1109/ICCCNT45670.2019.8944482
- [C3] **Sarvesh Pandey** and Udai Shanker. CART: A Real-Time Concurrency Control Protocol. *22nd International Database Engineering & Applications Symposium (IDEAS), Italy, 2018*. doi:10.1145/3216122.3216161
- [C2] **Sarvesh Pandey** and Udai Shanker. Priority Inversion in DRTDBS: Challenges and Resolutions. *ACM India Joint International Conference on Data Science & Management of Data (CoDS-COMAD), Goa, 2018*. doi:10.1145/3152494.3167976
- [C1] **Sarvesh Pandey** and Udai Shanker. A One Phase Priority Inheritance Commit Protocol. *14th International Conference on Distributed Computing and Internet Technology (ICDCIT), 2018*. doi:10.1007/978-3-319-72344-0_24

Refereed Journals

- [J10] Suneel Kumar, **Sarvesh Pandey** and Umesh Bhatt. On Enhancing E-Commerce Shipping Policies with Blockchain and Recommender Systems. *SN Computer Science, 6(2), 2025*. doi:10.1007/s42979-025-03687-x
- [J9] Suneel Kumar and **Sarvesh Pandey**. WSC: A Crowd-Powered Framework for Mapping Decomposable Complex-Task With Worker-Set. *Concurrency and Computation: Practice and Experience, 36(28), 2024*. doi:10.1002/cpe.8305
- [J8] **Sarvesh Pandey** and Udai Shanker. A Priority Inheritance Centered Locking Protocol for DRTDBS. *Wireless Personal Communications, 130(2), 2023*. doi:10.1007/s11277-023-10316-4
- [J7] **Sarvesh Pandey** and Udai Shanker. On Developing Framework for Schedulable Priority-Driven Systems: A Futuristic Review. *Wireless Personal Communications, 128(4), 2023*. doi:10.1007/s11277-022-10082-9

- [J6] **Sarvesh Pandey** and Udai Shanker. RAPID: A Real-Time Commit Protocol.
Journal of King Saud University – Computer and Information Sciences (Elsevier), 34(6), 2022.
[doi:10.1016/j.jksuci.2020.04.006](https://doi.org/10.1016/j.jksuci.2020.04.006)
- [J5] **Sarvesh Pandey** and Udai Shanker. STEP: A Concomitant Protocol for Real-Time Applications.
Wireless Personal Communications, 122(4), 2022. [doi:10.1007/s11277-021-09112-9](https://doi.org/10.1007/s11277-021-09112-9)
- [J4] **Sarvesh Pandey** and Udai Shanker. A Contention Aware EQS Priority Assignment Heuristic for Cohorts in DRTDBS.
The Journal of Supercomputing (Springer), 77(7), 2021. [doi:10.1007/s11227-020-03530-5](https://doi.org/10.1007/s11227-020-03530-5)
- [J3] Anupama Arun, **Sarvesh Pandey** and Udai Shanker. A Multi-Replica-Centered Commit Protocol for Distributed Real-Time and Embedded Applications.
International Journal of System Dynamics Applications, 10(4), 2021. [doi:10.4018/ijdsda.20211001.aa18](https://doi.org/10.4018/ijdsda.20211001.aa18)
- [J2] **Sarvesh Pandey** and Udai Shanker. Transaction Scheduling Protocols for Controlling Priority Inversion: A Review.
Computer Science Review (Elsevier), 35, 2020. [doi:10.1016/j.cosrev.2019.100215](https://doi.org/10.1016/j.cosrev.2019.100215)
- [J1] **Sarvesh Pandey**, Aman Kumar Pandey and Udai Shanker. SP-LIFT: A Serial Parallel Linear and Fast-Paced Recovery-Centered Transaction Commit Protocol.
SN Computer Science, 1(3), 2020. [doi:10.1007/s42979-020-00193-0](https://doi.org/10.1007/s42979-020-00193-0)

Preprints

- [P1] Umesh Bhatt and **Sarvesh Pandey**. Empirical Analysis of EIP-3675: Miner Dynamics, Transaction Fees, and Transaction Time.
arXiv preprint, 2024. [doi:10.48550/arXiv.2403.17885](https://doi.org/10.48550/arXiv.2403.17885)

Edited Book and Book Chapters

- [B1] Udai Shanker and **Sarvesh Pandey** (Editors). Handling Priority Inversion in Time-Constrained Distributed Databases.
IGI Global, Advances in Data Mining and Database Management book series, 2020. ISBN 9781799824916
- [B2] **Sarvesh Pandey** and Udai Shanker. EDRC: An Early Data Lending Based Real-Time Commit Protocol.
Encyclopedia of Information Science and Technology, 5th ed., IGI Global, 2021, pp. 800–814
- [B3] **Sarvesh Pandey** and Udai Shanker. MDTF: A Contention Aware Priority Assignment Policy for Cohorts in DRTDBS.
Encyclopedia of Organizational Knowledge, Administration, and Technologies, IGI Global, 2020, pp. 742–756
- [B4] **Sarvesh Pandey** and Udai Shanker. Causes, Effects and Consequences of Priority Inversion in Transaction Processing.
In: Handling Priority Inversion in Time-Constrained Distributed Databases, IGI Global, 2020

RESEARCH SUPERVISION

Mentoring undergraduate researchers at UC Irvine on a model for predicting Ethereum price movements by combining on-ledger data with external sources.