

KOUSIK KUMAR DUTTA



“Bad luck is not for those who struggle, but for those who never struggle.”

CONTACT DETAILS

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SW312, Satluj Hostel, IIT Ropar permanent campus, Rupnagar 140001, Punjab, India.

ACADEMIC SERVICES

- **Reviewer:** Geoinformatica.
- **Teaching Assistant:** Database Management System, Software Engineering, PG Software Lab.

ACHIEVEMENTS

- GATE 2019: Rank - 644

SKILLS

- JAVA, C, C++, Python, SQL
- LaTeX, Shell script
- Eclipse, VS Code, ChampSim
- MS Word, Excel, PowerPoint

PERSONAL INFORMATION

Citizenship: **India**

Languages: **English, Hindi, Bengali** (native)

HOBBIES

- Reading Bhagavad-gītā, Śrīmad-Bhāgavatam.
- Playing chess, cricket, and table tennis.
- Listening mild music.

PROFILE

Ph.D. scholar at IIT Ropar specializing in spatio-temporal databases, navigation systems, graph libraries, and parallel algorithm design. Skilled in Java programming, with proven experience in developing a scalable graph library enabling high-speed information retrieval. Demonstrated research versatility through publications across multiple domains. Committed to integrating cutting-edge technologies into my research to advance the field.

RESEARCH INTERESTS

SPATIO-TEMPORAL DATABASE: Navigation, scalable algorithm, spatial properties, temporal variations, constrained optimization.

GPU PARALLELIZATION: GPU architecture, handling large graphs, scheduling tasks, memory and resource utilization.

PUBLICATIONS

CONFERENCE

- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: Interval based constrained path optimization in time-dependent road networks. In: *WISE 2025* (Just Accepted).
- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: Streamlining vehicle logistics: Maximizing pickup and delivery while considering loading and unloading costs. In: *Proceedings of the 33rd ACM SIGSPATIAL 2025*. <https://doi.org/10.1145/3748636.3763205>
- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: Constrain path optimization on time-dependent road networks. In: *WISE 2024 PhD Symposium, Demos and Workshops (2024)*. <https://doi.org/10.1007/978-981-96-1483-7>
- ◇ Tanksale, P.N., **Dutta, K.K.**, Das, S., Kalyan, T. V.: CAMOUFLAGE: An Efficient Mechanism to Hide Congestion in NVM LLC, *Extended Abstract in HiPC 2023*.
- ◇ **Dutta, K.K.**, Dewan, A., Gunturi, V.M.V.: A multi-threading algorithm for constrained path optimization problem on road networks. In: *WISE 2022*, pp. 110–118 (2022). https://doi.org/10.1007/978-3-031-20891-1_9
- ◇ **Dutta, K.K.**, Tanksale, P.N., Das, S.: A fairness conscious cache replacement policy for last level cache. In: *DATE 2021*, pp. 695–700 (2021). <https://doi.org/10.23919/DATE51398.2021.9474096>
- ◇ Dewan, A., Gunturi, V.M.V., Naik, V., **Dutta, K.K.**: NEAT activity detection using smartwatch at low sampling frequency. In: *IEEE SmartWorld/SCALCOM/UIC/ATC/IOP/SCI*, pp. 25–32 (2021). <https://doi.org/10.1109/SWC50871.2021.00014>

JOURNAL

- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: A scalable approach for time-dependent constrained path optimization on road networks. (under review)
- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: BiScenic: A Bidirectional Algorithm for Scenic Route Optimization. (under review)

EDUCATION

PH.D. in Computer Science and Engineering. *Indian Institute of Technology Ropar* (CGPA 7.92). **2021–Ongoing**

- ◇ Thesis title: *Constrained Path Optimization Problem on Time-dependent Road Networks*.
- ◇ Data Mining, Scheduling in Parallel and Distributed Systems, Advanced Operating Systems.

M.TECH. in Computer Science and Engineering. *Indian Institute of Technology Ropar* (CGPA 8.39). **2019–2021**

- ◇ Thesis title: *A Multi-Threading Algorithm for Constrained Path Optimization Problem on Road Networks*.
- ◇ Advanced spatial computing, Memory system and architecture, Advanced computer architecture.