

# KOUSIK KUMAR DUTTA



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

## CONTACT DETAILS

@ kousikkumar95@gmail.com  
☎ +918293361841  
🌐 Website  
🔗 kousik-kr  
📄 kousik-kumar-dutta-8577952b2  
✉ SW312, Satluj Hostel, IIT Ropar  
permanent campus, Rupnagar  
140001, Punjab, India.

## ACHIEVEMENTS

- GATE 2019: Rank - 644
- Snackdown-2017  
Pre-Elimination round: Rank -  
2090 and Certificate of  
participation.

## 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

- Listening to mild music.
- Playing chess, cricket, and  
table tennis.
- Watching cricket (test  
matches), crime thrillers,  
comedy, and realistic dramas.

## 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.

**REINFORCEMENT LEARNING FOR NAVIGATION:** Prune for scalability.

## PUBLICATIONS

### CONFERENCE

- ◇ **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 (just accepted).
- ◇ **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>
- ◇ **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](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: 2021 IEEE SmartWorld/SCALCOM/UIC/ATC/IOP/SCI, pp. 25–32 (2021). <https://doi.org/10.1109/SWC50871.2021.00014>
- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: Interval based constrained path optimization in time-dependent road networks. In: WISE 2025 (under review).

### JOURNAL

- ◇ **Dutta, K.K.**, Gunturi, V.M.V.: A scalable approach for time-dependent constrained path optimization on road networks. ACM TSAS (2025) (under review)

## EDUCATION

PH.D. in Computer Science and Engineering. *Indian Institute of Technology Ropar.* **2021–2026**

- ◇ 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**

- ◇ Advanced spatial computing, Memory system and architecture, Advanced computer architecture.