

AKSHAY GUPTA

Assistant Professor, IIT (ISM) Dhanbad, India

Contact No: +91-9468617387

Email: akshay_g@ce.iitr.ac.in

[Google Scholar](#)



EDUCATION

Year	Degree/Examination	Institution	CGPA/ Percentage
Feb, 2025-Current	Assistant Professor	IIT (ISM) Dhanbad, India	
Sep, 2024-Feb,2025	Project Research Scientist	IIT Bombay, India	-
2019-2024	PhD	IIT Roorkee, India	9.67
2016-18	Master of Technology (Transportation Engineering)	IIT Roorkee, India	8.647 (with Distinction)
2011-2015	B.E. (Civil Engineering)	M.B.M. Engineering College Jodhpur	74.06 % (with Honours)
2009-10	Higher Secondary	RBSE (Gopal Academy)	88.46 % (with Distinction)
2007-08	Secondary	RBSE (Bal Bharti)	90.33 % (with Distinction)

RESEARCH INTEREST

Human factors, Behaviour analysis, Public Transport, Accessibility, Walkability, Driving Behaviour, ITS.

PATENTS

1. **Gupta A.**, Shreyansh, Priyanshu Pansari, Choudhary P, Parida M Dynamic severity-level real-time lane departure warning system with sparse 3D-Lidar sensor. (Patent published)

PUBLICATIONS

Journal Papers

1. **Gupta A.**, Choudhary P, Parida M..Analyzing Lane Change Execution Behaviour on Expressway Using an Instrumented Vehicle: A Random effect Accelerated Failure Time

(AFT) approach **IEEE Transactions on Intelligent Transportation Systems** DOI: [10.1109/TITS.2024.3436569](https://doi.org/10.1109/TITS.2024.3436569)

2. **Gupta, A.**, Choudhary, P., Parida, M., 2024. Examining risky driving behaviours: A comparative analysis of SUVs and other car types. **Transport Policy** 152, 9–20. <https://doi.org/10.1016/j.tranpol.2024.04.012>
3. **Gupta, A.**, Choudhary, P. and Parida, M., 2021. Understanding and modelling risky driving behaviour on high-speed corridors. **Transportation Research Part F: Traffic Psychology and Behaviour**, 82, pp.359-377. <https://doi.org/10.1016/j.trf.2021.09.009>
4. **Gupta A.**, Shreyansh, Choudhary P, Parida M. 2024. Dynamic Object Detection Using Sparse Lidar Data For Autonomous Machine Driving And Road Safety Applications. **Expert System with Application**, 255, Part B, 124636 <https://doi.org/10.1016/j.eswa.2024.124636>
5. **Gupta A.**, Choudhary P, Parida M. Unveiling Gap Acceptance Behavior during Lane change with EDIV data: A Deep Dive into Driving Behaviour on Expressway using A Three Level Mixed Effect Linear Regression Approach **IATSS** <https://doi.org/10.1016/j.iatssr.2024.07.003>
6. **Gupta A.**, Shreyansh, Choudhary P, Parida M. Development of Real-Time Lane Departure Warning System for Varying Severity Levels Using Sparse 3D-LiDAR Sensor. **Transportation Research Record** <https://doi.org/10.1177/03611981241277752>
7. **Gupta, A.**, Bivina, G.R., Parida, M., 2022. Does neighborhood design matter for walk access to metro stations? An integrated SEM-Hybrid discrete mode choice approach. **Transport Policy** 121, 61–77. <https://doi.org/10.1016/j.tranpol.2022.03.010>
8. Choudhary, P., **Gupta, A.**, Velaga, N.R.: Perceived risk vs actual driving performance during distracted driving: A comparative analysis of phone use and other secondary distractions. **Transportation Research Part F: Traffic Psychology and Behaviour**. 86, 296–315 (2022). <https://doi.org/10.1016/j.trf.2022.03.001>
9. Bivina, G.R., **Gupta, A.** and Parida, M., 2019. Influence of microscale environmental factors on perceived walk accessibility to metro stations. **Transportation Research Part D: Transport and Environment**, 67, pp.142- 155 <https://doi.org/10.1016/j.trd.2018.11.007>
10. Bivina, G.R., **Gupta, A.** and Parida, M., 2020. Walk Accessibility to Metro Stations: An analysis based on Meso-or Micro-scale Built Environment Factors. **Sustainable Cities and Society**, 55, p.102047 <https://doi.org/10.1016/j.scs.2020.102047>
11. Chauhan, V., **Gupta, A.** and Parida, M., 2021. Demystifying Service Quality of Multimodal Transportation Hub (MMTH) through Measuring Users' Satisfaction of Public Transport. **Transport Policy**, 102, p.47-60. <https://doi.org/10.1016/j.tranpol.2021.01.004>

12. Chauhan, V., **Gupta A.**, and Parida M. 2022. "Evaluating Service Quality of Multimodal Transportation Hub (MMTH) in Delhi, India: A Gender-Based Perspective." **Case Studies on Transport Policy** 10 (April). Elsevier Ltd: 1234–1248. [doi:10.1016/j.cstp.2022.04.007](https://doi.org/10.1016/j.cstp.2022.04.007)
13. Kumar, A., **Gupta, A.**, Parida, M., & Chauhan, V. (2022). Service quality assessment of ride-sourcing services : A distinction between ride-hailing and ride-sharing services. **Transport Policy**, 127(August 2021), 61–79. <https://doi.org/10.1016/j.tranpol.2022.08.013>
14. Chauhan, V., **Gupta, A.**, Parida, M. Do users ' characteristics really influence the perceived service quality of Multimodal Transportation Hub (MMTH)? An association rules mining approach. **Multimodal Transportation**. 2, 100069 (2023). <https://doi.org/10.1016/j.multra.2023.100069>
15. Yadav, R. K., **Gupta, A.**, Choudhary, P., & Parida, M. (2024). Enhancing urban mobility: comparative analysis of improvement priorities for conventional and electric buses in Kathmandu city. **Sustainable Transport and Livability**, 1(1). <https://doi.org/10.1080/29941849.2024.2347389>
16. Barbieri, D.M., Lou, B., Passavanti, M., Hui, C., Hoff, I., Lessa, D.A., Sikka, G., Chang, K., **Gupta, A.**, Fang, K., Banerjee, A., Maharaj, B., Lam, L., Ghasemi, N., Naik, B., Wang, F., Foroutan Mirhosseini, A., Naseri, S., Liu, Z., Qiao, Y., Tucker, A., Wijayarathna, K., Peprah, P., Adomako, S., Yu, L., Goswami, S., Chen, H., Shu, B., Hessami, A., Abbas, M., Agarwal, N., Rashidi, T.H. (2021): Impact of COVID-19 pandemic on mobility in ten countries and associated perceived risk for all transport modes. **PLoS One**. 16(2): e0245886. <https://doi.org/10.1371/journal.pone.0245886>
17. Maria, D., Lou, B., Passavanti, M., Hui, C., Antunes, D., Maharaj, B., Banerjee, A., Wang, F., Chang, K., Naik, B., Yu, L., Liu, Z., Sikka, G., Tucker, A., Foroutan, A., Naseri, S., Qiao, Y., **Gupta, A.**, Abbas, M., Fang, K., Ghasemi, N., Peprah, P., Goswami, S., Hessami, A., Agarwal, N., Lam, L., Adomako, S. (2020)(a): A survey dataset to evaluate the changes in mobility and transportation due to COVID-19 travel restrictions in Australia , Brazil , China , Ghana , India , Iran , Italy , Norway , South Africa , United States. **Data Br**. 33, 106459. <https://doi.org/10.1016/j.dib.2020.106459>
18. Maria, D., Lou, B., Passavanti, M., Hui, C., Antunes, D., Maharaj, B., Banerjee, A., Wang, F., Chang, K., Naik, B., Yu, L., Liu, Z., Sikka, G., Tucker, A., Foroutan, A., Naseri, S., Qiao, Y., **Gupta, A.**, Abbas, M., Fang, K., Ghasemi, N., Peprah, P., Goswami, S., Hessami, A., Agarwal, N., Lam, L., Adomako, S. (2020)(b): Survey data regarding perceived air quality in Australia, Brazil, China, Ghana, India, Iran, Italy, Norway, South Africa, United States before and during Covid-19 restrictions. **Data Br**. 32, 106169. <https://doi.org/10.1016/j.dib.2020.106169>
19. Baowen Lou, Diego Maria Barbieri, Marco Passavanti, Cang Hui, **Gupta A.**, Inge Hoff, Daniela Antunes Lessa, Gaurav Sikka, Kevin Chang, Kevin Fang, Louisa Lam, Brij Maharaj, Navid Ghasemi, Yaning Qiao, Solomon Adomako, Ali Foroutan Mirhosseini, Bhaven Naik,

Arunabha Banerjee, Fusong Wang, Andrew Tucker, Zhuangzhuang Liu, Kasun Wijayaratna, Sahra Naseri, MSc; Lei Yu, Hao Chen, Benan Shu, Shubham Goswami, Prince Praph, Amir Hessami, Montasir Abbas, Nithin Agarwal, Air pollution perception in ten countries during COVID-19 pandemic. **Ambio**, Volume 51, pages 531–545

<https://doi.org/10.1007/s13280-021-01574-2>

20. Yadav R., **Gupta A.**, Choudhary P, Parida M. Service Quality and Personal Attitudes as Predictors of Overall Satisfaction with Public Buses: A Case Study of Kathmandu, Nepal. (**Transportation Research Record**) <https://doi.org/10.1177/03611981241257256>
21. **Gupta A.**, Choudhary P, Parida M. Exploring Relations among Drivers' Characteristics and Risky Driving Behaviour on Expressways Using Association Rules Mining and Logit Modelling. **Crash Worthiness (Under review)**
22. **Gupta A.**, Choudhary P, Parida M., Driving Towards Accurate Lane Change Prediction: Insight from Machine Learning Analytics on Instrumented Vehicle Data. **Expert System With Applications (Under review)**
23. **Gupta A.**, Choudhary P, Parida M., Advanced Sensor Analytics and Extreme Value Modeling: Dichotomizing Day-Night Variability in Rear-End Collisions on Expressways. **Transportmetrica B: Transport Dynamic (Under review)**
24. **Gupta A.**, Kishore A., Choudhary P, Parida M. Dynamic Road Boundary Detection Using Sparse 3D-LiDAR in Complex Road and Environmental Conditions. **Transportation Research Record (Under review)**

Conference Papers

1. **Gupta, A.**, Bivina, G.R., and Parida, M. Do Neighborhood Design Matter? An Assessment of Subjective and Objective Built Environment Factors on Access Mode Choice. (101st Annual Meeting of **Transportation Research Board**, Washington D.C., January 9-13, 2022)
2. **Gupta A.**, Choudhary P, Parida M, Assessment of Risky Driving Behavior on Expressways: An Association Rules Mining Approach. (101st Annual Meeting of **Transportation Research Board**, Washington D.C., January 9-13, 2022)
3. **Gupta A.**, Shreyansh, Choudhary P, Parida M. Towards a Systematic Approach to Detect, Classify and Track Surrounding Vehicles in Dynamic Conditions Using a Vehicle Mounted Cost-effective LiDAR Sensor on Expressways. 102nd Annual Meeting of **Transportation Research Board**, Washington D.C., USA, January 8-12, 2023.
4. **Gupta A.**, Choudhary P, Parida M Modelling of Lane Change Execution Behaviour on Expressway Using an Instrumented Vehicle: A Random Parameters Accelerated Failure Time

- (AFT) approach 103rd Annual Meeting of **Transportation Research Board (TRB)**, Washington D.C., USA, January 7-11, 2024. (Presented)
5. **Gupta A.**, Choudhary P, Parida M, Rear-End Conflict Assessment for Daytime and Nighttime Conditions using Advanced Sensor Analytics and Extreme Value Modelling Approach (104th Annual Meeting of **Transportation Research Board**, Washington D.C., January 9-13, 2025) (Accepted)
 6. **Gupta A.**, Kishore A., Choudhary P, Parida M. Dynamic Road Boundary Detection Using Sparse 3D-LiDAR in Complex Road and Environmental Conditions. (104th Annual Meeting of **Transportation Research Board**, Washington D.C., January 9-13, 2025) (Accepted)
 7. **Gupta A.**, Choudhary P, Parida M. Does Type of Car Really Influence Driver Behaviour? A Comparative Study of Risky Driving Behaviors between SUVs and other Types of Cars. **16th World Conference on Transport Research (WCTR)**, Montreal, Canada, from 17 to 21 July 2023
 8. **Gupta, A.**, Bivina, G.R. and Parida, M. Prioritising Pedestrian's Needs Around Transit Stations Through Walkability Assessment: A walk audit tool approach. **16th World Conference on Transport Research (WCTR)**, Montreal, Canada, from 17 to 21 July 2023
 9. **Gupta A.**, Shreyansh, Choudhary P, Parida M. Pipeline development to detect, classify and track surrounding vehicles using a single sparse LiDAR in dynamic condition. **16th World Conference on Transport Research (WCTR)**, Montreal, Canada, from 17 to 21 July 2023
 10. **Gupta, A.**, Bivina, G.R. and Parida, M. How Metros' Catchment Area Affect Commuters Choice To Walk Or Use Feeder Modes? **16th World Conference on Transport Research (WCTR)**, Montreal, Canada, from 17 to 21 July 2023
 11. **Gupta A.**, Choudhary P, Parida M. Assessment of Risky Driving Behavior on Expressways: Association between Risk Levels, Drivers' Driving Characteristics and Demographics (Accepted in 3rd International Conference on Transportation and Development, **ASCE**, Seattle, Washington, May 31-June 3, 2022)
 12. **Gupta, A.**, Bivina, G.R. and Parida, M. "Measuring Impact of Objective and Subjective Built Environment Factors on Access Mode Choice to Metro Stations." World Conference on Transport Research, WCTR- 2019 held at IIT Bombay.
 13. **Gupta, A.**, Bivina, G.R. and Parida, M. "How Far People Can Walk to Access Metro? A Study of Access Trip Characteristics of Metro Users." **EASTS-ISC EASTS Conference- 2019** held at Colombo, Sri-lanka on 9-12 August, 2019.
 14. **Gupta A.**, Shreyansh, Choudhary P, Parida M, Development of Real Time Lane Departure Warning System Using Sparse 3D-Lidar Sensor. **CTRG**, 17-21 Dec. 2023 (Presented)
 15. **Gupta, A.**, Bivina, G.R. and Parida, M. "Assessing the Walkability around Metro Station: A Walk Audit Tool Approach." National Conference – Recent Advanced in Traffic Engineering, **RATE**, 2018 held at SVNIT Surat on 11-12 August 2018.

16. **Gupta, A.**, Bivina, G.R. and Parida, M. "Access environment around Metro station: Trade-off between walk and feeder modes". **CTRG-2021**, Tiruchirappalli, India. 14-17 December, 2021.
17. Bivina G. R., **Gupta A.**, Dr. M. Parida,. "Improving Pedestrians' access around metro stations in Delhi through better management of Safety & security. Presented in National Conference organised by **Central Academy of Police Training (CAPT): Bureau of Police Research and Development** on Feb 22, 2019.
18. Bivina, G.R., **Gupta, A.** and Parida, M. "Role of micro scale Built Environment Factors on Perceived walk accessibility to metro station: A case study of Delhi metro. ." EASTS-ISC **EASTS Conference-2019** held at Colombo, Srilanka on 9-12 August, 2019.
19. Chauhan V., **Gupta, A.** and Parida, M. Factors affecting users' perception while using Multi-Modal Transportation Hub. **CTRG-2021**, 14-17 December, 2021.
20. Choudhary P., **Gupta A.**, Valaga N., Perceived Risk vs Actual Driving Performance during Distracted Driving: A Comparative Analysis of Phone Use and Other Secondary Distractions. (101st Annual Meeting of **Transportation Research Board**, Washington D.C., January 9-13, 2022)
21. Chauhan, V., **Gupta, A.** and Parida, M., 2021. Investigating Gender Diversification while Analyzing Service Quality of Multimodal Transportation Hub (MMTH) (101st Annual Meeting of **Transportation Research Board**, Washington D.C., January 9-13, 2022)
22. Chauhan V., **Gupta A.**, Parida M. Exploring Association of users' characteristics with Service Quality of Multimodal Transportation Hub (MMTH) for ensuring seamless and sustainable mobility: A Case Study of Delhi, India. 102nd Annual Meeting of **Transportation Research Board**, Washington D.C. USA, January 8-12, 2023.
23. Yadav R., **Gupta A.**, Choudhary P, Parida M. A Comparative Study on the Effects of Service Quality and Personal Attitudes on Overall Satisfaction with Public Buses: A Case Study of Kathmandu, Nepal. **16th World Conference on Transport Research (WCTR)**, Montreal, Canada, from 17 to 21 July 2023
24. Yadav R., **Gupta A.**, Choudhary P, Parida M. Service Quality Assessment of Electric Buses: A PLS-SEM Approach. 16th Urban Mobility India, Conference, 25th -27th Oct, 2023, New Delhi, India.
25. Shreyansh, **Gupta A.**, Varghese Varun, Makoto Chikaraishi. Spatial Transferability Analysis of Choice Models with Computational Graphs. 8th **International Choice Modelling Conference**, which will be held on 1-3 April 2024 in Puerto Varas, Chile (Presented)

26. Yadav R., **Gupta A.**, Choudhary P, Parida M. Evaluating Urban Transit Enhancement Strategies: Conventional vs. Electric Buses in Kathmandu City. **ASCE International Conference on Transportation & Development** ([ICTD 2024](#)) (Accepted)
27. **Gupta A.**, Choudhary P, Parida M. Comprehensive analysis of gap acceptance behaviour during Lane Change maneuver on Expressways. **ASCE International Conference on Transportation & Development** ([ICTD 2024](#)) (Accepted)
28. Yadav R., **Gupta A.**, Choudhary P, Parida M. Enhancing Urban Mobility: Comparative Analysis of Improvement Priorities for Conventional and Electric Buses in Kathmandu City” **IATBR - 17th International Conference on Travel Behavior Research**, Vienna, Austria (14-17 July, 2024)

AWARDS/ SCHOLARSHIPS

1. BEST PAPER AWARD

- 1. World Conference of Transport Research (WCTR)-15** 26th to 30th May, 2019

(Best Paper Award by Cairo University For Transport in Developing Countries)

Gupta, A., Bivina, G.R. and Parida, M. “Measuring Impact of Objective and Subjective Built Environment Factors on Access Mode Choice to Metro Stations.” International Conference **World Conference on Transport Research, (WCTR)- 15** held at IIT Bombay.

- 2. Best Paper Award 2023 by the journal ‘Multimodal Transportation’**

Chauhan V., **Gupta, A.** and Parida, M. Do users' characteristics really influence the perceived service quality of Multimodal Transportation Hub (MMTH)? An association rules mining approach" **Multimodal Transportation Journal Award 2023**

- 3. Outstanding Poster Award at Institute Research Day 2024 (IIT Roorkee)**

Gupta, A., Choudhary P., Parida, M., Enhancing High-Speed Road Safety: Insights from Advanced LiDAR-Based Driver Behaviour Analysis.

2. GATE Scholarship from Ministry of Human Resource and Development (MHRD), India

3. ROAD SAFETY HACKATHON – ADAS

Hackathon to develop India specific Advanced Driver Assistance Systems (ADAS) products to improve road safety.

Secured Second place and cash prize of worth 5 Lac Rs. (6,015 \$ USD).

4. TRAVEL GRANT

1. Department of Science and Technology (DST), Science and Engineering Research Board, Government of India (To attend WCTR in Montreal, Canada) 2023
 2. Council of Scientific and Industrial Research, Human Resource Development Group (CSIR), Government of India (To attend 103th Annual Meeting of Transportation Research Board (TRB) at Washington D.C., USA) 2024
 3. Dean of Resources and Alumni Affairs, IIT Roorkee (To attend 102th Annual Meeting of Transportation Research Board (TRB) at Washington D.C., USA) 2022
 4. Department of Civil Engineering, IIT Roorkee (To attend 103th Annual Meeting of Transportation Research Board (TRB) at Washington D.C., USA) 2024
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5. DOCTORAL THESIS PRESENTATION

Selected for 3 min Doctoral thesis presentation from all around the world in the area of Transportation Safety at TRB 2024 103th Annual meeting of Transportation Research Board, Washington DC USA

Title: Enhancing High-Speed Road Safety: Insights from Advanced LiDAR-Based Driver Behavior Analysis

WORK EXPERIENCE

Transportation Planner, AECOM India Pvt. Ltd.

06/2018 – 12/ 2019

PROFESSIONAL MEMBERSHIP

World Conference of Transport Research Society (WCTRs)

Eastern Asia Society of Transportation Studies (EASTs)

International Conference on Travel Behavior Research (IATBR)

INVITED TALKS

CTRG Executive Course-2021 (14-17th Dec, 2021)

6th Conference of Transportation Research Group of India (CTRG)

Course ID-7: Driving behaviour assessment techniques for traffic safety studies

Virtual Event at World Conference of Transport Research (WCTR) (27 July 2022)

Talk on: Impact of neighborhood design on walk accessibility to metro stations

Theme: Transit development in developing countries.

One-Day Workshop on Advancing Traffic Safety Using ADAS and DMS Systems (19th April, 2024) at IIT Hyderabad.

Talk title: Real Time Lane Departure Warning System Using 3D LiDAR

3rd Webinar of the series Sustainable Transport and Liveability (27 June, 2024) organized by World Conference of Transport Research (WCTR) and Indian Institute of Science (IISC) Bangalore

Talk title: Enhancing urban mobility: comparative analysis of improvement priorities for conventional and electric buses in Kathmandu city

First workshop on Naturalistic Driving Studies: Progress And Prospects organized by IIT Jammu, IIT Hyderabad, IIT Roorkee, CRRI, Liverpool University. (30-31 August, 2024)

Talk title: Beyond the Lens: Harnessing LiDAR for Advanced Insights in NDS

REVIEWER FOR PEER REVIEWED JOURNALS

1. Sustainable cities and society
2. Safety Science
3. Accident Analysis and Prevention
4. Transportation Research Part F: Traffic and Psychology
5. Transportation Research Part D: Transport and environment
6. Travel Behaviour and Society
7. Nature Scientific Report
8. Transport Research Board
9. Journal of Urban Mobility
10. Urban Mobility International
11. Transportation Research Record
12. Journal of Asian Architecture and Building Engineering
13. Discover Civil Engineering: Springer Nature
14. Discover Environment: Springer Nature
15. Multimodal Transportation
16. IEEE-Access
17. Case Studies in Transport Policy
18. Engineering Applications of Artificial Intelligence

REFERENCES

Dr. Manoranjan Parida
Director, CSIR-CRRI, New Delhi &
Professor IIT Roorkee
director.crrri@nic.in
+91-9837423963

Dr. Pushpa Choudhary
Assistant Professor IIT Roorkee
pushpa.fce@iitr.ac.in
91-1332-284925