

SUCHISMITA NAYAK

Assistant Professor, Department of Planning and Allied, School of Planning and Architecture, Bhopal

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Google Scholar: <https://scholar.google.com/citations?user=GZpFgPAAAAAJ&hl=en>

CAREER STATEMENT

I am currently an Assistant Professor at the Department of Planning and Allied, School of Planning and Architecture, Bhopal. My research interests lie in the application of quantitative methods, statistical modelling, and deep learning techniques to address critical challenges in inclusive planning, smart and green mobility. I specialize in activity-based modelling, travel behaviours analysis, urban and transportation policy research, as well as sustainable and emerging architectural practices, including tall building architecture and vernacular architecture.

CURRENT AFFILIATION

05/2025- Present Assistant Professor, Department of Planning and Allied
School of Planning and Architecture, Bhopal

EDUCATIONAL BACKGROUND

- 07/2017- 07/2023** **Doctor of Philosophy (PhD)**
Department of Architecture and Regional Planning
Indian Institute of Technology Kharagpur (IIT Kharagpur), India
Dissertation area: Activity-based model, Machine learning, Sustainable mobility, Transport policy
Dissertation title: A Daily Activity-Travel Simulator for India Incorporating Multiday and Spatio-Temporal Interdependencies
Major coursework: Advanced Transportation Planning, Decision Modelling, Research Methodology, Urban Transportation System Planning, English for Technical Writing
- 07/2015- 04/2017** **Master of Planning (Urban Planning)**
Department of Urban Planning, School of Planning and Architecture, Delhi
Dissertation area: Accessibility, Inclusive Planning, Travel Probability field, Travel Behaviour
Dissertation title: Planning for Inclusive Mobility of Urban Poor - Kolkata
Grade: First class with Distinction
Major coursework: Advanced Planning Techniques, Infrastructure & Transportation, Inclusive Urban Planning, Project Planning & Management, Planning & Design Studio, Urban Governance
- 07/2010- 05/2015** **Bachelor of Architecture (B. Arch.)**
Department of Architecture, Town and Regional Planning
Indian Institute of Engineering Science and Technology, Shibpur
Grade: First class with Honours
Dissertation area: Energy-efficient Building, Iconicity, Sustainable Materials, Tall Building
Dissertation title: Vertical Green City-Part of TOD, NOIDA
Major Coursework: Architectural Design, Strength of Materials, Energy Efficient Architecture, Evolution of Architecture, Materials and Methods of Construction, Urban Design

RESEARCH INTERESTS

Expertise Transportation Planning, Inclusive Planning, Policy Studies, Urban Economics, Urban Informatics and Modelling

SKILLS

Techniques Big-Data Analytics, Data-mining, Data Visualization, Econometric Modelling, Machine Learning Algorithms, Statistical Analysis

Tools Arc GIS, CUBE, GAUSS, Microsoft Office Packages (Word, Excel, PowerPoint, and Outlook), Minitab, Python, R, SPSS, VISUM, VISSIM

ACHIEVEMENTS

Institute Post-doctoral Fellowship 2024, Indian Institute of Technology Bombay

IIT KGP Foundation International Internship Scholarship Award 2022

MHRD Graduate Aptitude Test in Engineering (GATE) Scholarship for securing GATE, 2015 with All Indian Rank 253

Leadership Award in organizing Zonal National Association of Students of Architecture (ZONASA) Convention 2012 from Global Alumni Association of IEST, Shibpur

INVITED TALKS

Invited to present a talk on “A Multi-Day Activity Based Model Considering Inter-Household Interactions: The Case of India” as part of the ASU Transportation Seminar and Webinar Series sponsored by the TOMNET University Transportation Center, September 2022. Recording available at <https://tomnet-utc.engineering.asu.edu/seminars/fall-2022-seminars/>

Invited to present a talk on “Telecommuting in India: Pre to Post COVID-19 India” in the TransportLab weekly meetings, School of Geographical Sciences and Urban Planning, ASU, September 2022

RESEARCH EXPERIENCE

10/2024 – 05/2025 Post Doctoral Fellow

Department of Civil Engineering, IIT Bombay, India

Key Research Works:

- Modelling hidden interactions in vehicle ownership decisions & electric vehicle adoption behaviour

08/2022-09/2022 Visiting Research Fellow

TOMNET University Transportation Center, School of Sustainable Engineering and the Built Environment (SSEBE), Ira A. Fulton Schools of Engineering, ASU, United States

Host Faculty: Prof. Ram Pendyala, Professor and Director, SSEBE, ASU

Key Research Works:

- Exploration of synthetic population generation software (PopGen of US) to develop for India

TEACHING EXPERIENCE

05/2025-Present Assistant Professor, SPA Bhopal

Courses Taught in Masters in Planning: Transit Area Mobility Planning, Transport Economics, MURP Thesis Coordinator

Courses Taught in Bachelors in Planning: Contemporary Urban Planning Practices, Urban Design, Techniques of Planning II, Planning Lab

Administrative Responsibilities: Hostel warden, Food Club Faculty Coordinator

01/ 2025- Present Course Instructor of Swayam Prabha Architecture and Interior Design Channel, MoE, Govt. of India

Tall Building Architecture: Conceptualization and Design

01/ 2023- 10/2024 Faculty (Ad-hoc), IEST, Shibpur

Courses Taught in Masters in Urban Planning: Metropolitan and Regional Planning, Planning Legislation and Professional Practice, Transportation Planning, Detailed Project Report.

Administrative Responsibilities: Convenor of Sub-committee for Master of Planning (with specialization in Transportation Planning) formulated to prepare the proposals for the commencement of new PG specializations of the Department, members of more than 10 committees in department and institutional level

Supervision and mentoring:

Four Minor research project offered for final year Bachelor in Architecture students: Sanket Ghosh, T V S S Sriharsha, Samridha Patra and B. Ajay Kumar

07/2017- 07/2023 Teaching Assistant

Department of Architecture and Regional Planning, IIT Kharagpur, India

Taught and assisted courses at undergraduate and graduate level:

- Advanced Transportation Planning
- Master's Thesis
- Planning Informatics
- Architectural Design & Filed Study I & V

07/2020-12/2022

Teaching Assistant for SWAYAM- NPTEL course on ‘Urban Landuse and Transportation Planning’, an initiation by Ministry of Education (MoE), Government of India

THESIS GUIDANCE

Scholar Name	Institution	Course	Award Year	Thesis Title
Harish Dabhade	SPA Bhopal	MURP	2026 (pursuing)	Pedestrian Mobility Planning for a Pilgrim City: A Case Study of Shirdi , Maharashtra
Sumaiya Anam	SPA Bhopal	MURP	2026 (pursuing)	Mainstreaming Dark Stores/Micro Fulfilment Centres in Landuse Planning
Saurabh Kumar Verma	SPA Bhopal	MTPLM	2026 (pursuing)	Assessment of Impacts of Metro Services on Other Modes of Public Transportation in Lucknow City
Mohammad Yushea	SPA Bhopal	MTPLM	2026 (pursuing)	Impact of Tourist Mobility on the Transport System of a City
Santhosh Babu K A M	SPA Bhopal	B Plan	2026 (pursuing)	Assessing and Addressing the Impacts of Regulatory Ambiguity: A Case of Bike-Taxi Ban in Bangalore.
Athira Damodaran	IEST Shibpur	MOP	2024	Exploring The Relationship between Online and Offline Shopping Behavior and Characteristics of Urban Areas – A Case of Kochi, India
Aindrila Goswami	IEST Shibpur	MOP	2024	Integrating Tramways in a Metropolis – Case of Kolkata (co-guide)
Anwasha Marik	IEST Shibpur	B. Arch	2024	Medical College in Jalpaiguri
Prateeksha Singha	IEST Shibpur	B. Arch	2024	SPECTRUM: A Neurodiverse-Urban Community Center at Hebbal, Bengaluru

MINOR RESEARCH PROJECT (Co-guide)

Scholar Name	Institution	Course	Award Year	Thesis Title
Sanket Ghosh	IEST Shibpur	B. Arch	2024	Impacts of Culture And Disaster in Shaping the Vernacular Architecture of Coastal Areas
T V S S Sriharsha	IEST Shibpur	B. Arch	2024	Investigation of Introvert Vernacular Architecture
Samriddha Patra	IEST Shibpur	B. Arch	2024	Exploring Green Design Features Contributing Towards Form and Iconicity of Tall Buildings
B. Ajay Kumar	IEST Shibpur	B. Arch	2024	A Study of Form, Structural System and Material in High Rise Buildings in Indian Context

PUBLICATIONS

PUBLISHED JOURNAL ARTICLES

Nayak, S., & Pandit, D. (January 2025). 'Daily activity-travel pattern identification using natural language processing and semantic matching', Journal of Transport Geography, Elsevier, <https://doi.org/10.1016/j.jtrangeo.2024.104057>, **Impact Factor 5.7**

Nayak, S., & Pandit, D. (July 2023). 'A joint and simultaneous prediction framework of weekday and weekend daily-activity travel pattern using conditional dependency networks', Travel Behaviour and Society, Elsevier, <https://doi.org/10.1016/j.tbs.2023.100595>, **Impact Factor 5.1**

Nayak, S., & Pandit, D. (November 2022). 'A critical review of Activity Participation decision: A key component of activity-based travel demand models', International Journal of Urban Sciences, Taylor and Francis, <https://doi.org/10.1080/12265934.2022.215424>, **Impact Factor 2.9**

Nayak, S., & Pandit, D. (September 2021). 'Potential of telecommuting for different employees in the Indian context beyond COVID-19 lockdown', Transport Policy, Elsevier, DoI: 10.1016/j.tranpol.2021.07.010, **Impact Factor 6.3**

Nayak, S., & Gupta, S. (2020). 'Travel Probability Fields – An approach to understand travel behaviour: Case study of slum dwellers in Kolkata, India', Transportation Research Procedia, Elsevier, Volume 48, 2020, Pages 1546-1554, DoI: 10.1016/j.tpro.2020.08.197, **Cite Score 3.2**

PUBLISHED BOOK CHAPTERS

Nayak, S., & Pandit, D. (December 2019). 'Activity-based model: requisite of a new travel demand forecasting approach for India', Lecture Notes in Civil Engineering, vol 218. Springer, Singapore, DOI: 10.1007/978-981-16-9921-4

Nayak, S., & Gupta, S. (December 2019). 'Impact of accessibility on mobility and socio-economic levels of slum dwellers of Kolkata'. Lecture Notes in Civil Engineering, vol 220. Springer, Singapore, DoI:10.1007/978-981-16-9925-2

Nayak, S., & Gupta, S. (2018). 'Planning for Inclusive Mobility of Urban Poor in Kolkata. The Urban World', a quarterly published journal by Regional Centre for Urban and Environmental Studies (RECUES), Vol. 11, No.1, 21-27. ISSN 23490241

INTERNATIONAL CONFERENCE PRESENTATIONS

Navak, S., & Pandit, D. (July 2026). 'Enhancing Joint Activity Prediction Accuracy: An Application of Activity Sequence Matching Approach and Machine-Learning Algorithms', World Conference on Transport Research (WCTR) 2026. Accepted for presentation.

Navak, S., & Pandit, D. (December 2025). 'A Dynamic Modelling Framework Incorporating Household Vehicle Availability in Mode Choice', Young Professionals Conference, 8th Conference of Transportation Research Group of India. Presented.

Navak, S., & Nirmale, S. (December 2025). 'Capturing Behavioural Interdependencies: A Multivariate Error-Structured Framework for Joint Modelling of Two-Wheeler and Car Ownership and Mode Choice Decisions', 8th Conference of Transportation Research Group of India. Presented.

Navak, S. & Nirmale, S. (May 2025). 'An Integrated Modelling Framework for Vehicle Ownership Decisions: Capturing Interdependencies in Purchase Timing, Vehicle Type, and Fuel Choice', 'Transportation Research Symposium 2025', Elsevier, Rotterdam, The Netherlands. Accepted.

Navak, S., Mitra, S. & Paul, S., K. (March 2025), 'Where Art Meets Space: Interactions between Intangible Cultural Heritage and Buildings among the Patuas in West Bengal, India'. 'National Conference on Creative Economic Geography of Artisanal Crafts' at National Institute of Technology Rourkela.

Goswami, A., **Navak, S.,** & Mukhopadhyay, P. (December 2024). 'Challenges and Promises in Revival of Tram: A Case of Kolkata', 'International Conference on Environmental Challenges, Opportunities and Sustainable Solutions', Indian Institute of Technology Guwahati, India. **Received Best Student Paper Award.**

Navak, S., TVSS, S. & Mitra, S. (March 2024). 'Investigating Efficiency of Courtyard Designs in Western Indian Havelis', International Conference on Rethinking Built Environment, Mizoram, India.

Patra, S., **Navak, S.** & Paul, S., K. (March 2024). 'Exploring Green Design Features Contributing Towards Form and Iconicity of Tall Building'. International Conference on Rethinking Built Environment, Mizoram, India.

Ghosh, S., Mukhopadhyay, P., Mitra, S. & **Navak, S.** (March 2024). 'Impact of Disasters in shaping the Vernacular Architecture of Coastal Area'. International Conference on Rethinking Built Environment, Mizoram, India. **Received 'Special Mention Award'.**

Navak, S., & Pandit, D. (September 2022). 'An investigation of telecommuters perceived productivity from pre to post Covid 19 pandemic'. 58th ISOCARP World Planning Congress. Brussels, Belgium, DOI: 10.47472/zNavyRbh.

Paul, A., Banerjee, S. & **Navak, S.,** (April 2022). 'Sustainable development goals (SDG), covid-19 resilience and changing dynamics of urban policymaking in developing countries of the global south: a critical review', 6th International Conference 'Urban e-Planning', Lisbon, Portugal.

Navak, S., & Pandit, D. (February 2022). 'Concerns for sustainable mobility during the post-pandemic situation in a developing country, India'. International Conference on Urban Green Transitions: Decoding Opportunities and Challenges. Bhubaneswar, India.

Navak, S., & Pandit, D. (November 2019). 'Appraisal of Different Artificial Intelligence Techniques for Travel Demand Analysis'. 12th Conference of the Urban Mobility India (UMI) Conference and Expo. Lucknow, India: Institute of Urban Transport (IUT), India.

Navak, S., & Gupta, S. (September 2019). 'Travel behaviour of female slum dwellers in the mega city of Kolkata, India'. TRB's 6th International Conference on Women's Issues in Transportation. Irvine, California.

Navak, S., & Singh, M. (July 2017). 'Challenge for Inclusive city: Resettlements of Slum Dwellers, Delhi'. International conference on 'Future of Cities: Opportunities and Challenges'. Delhi, India: Institute for Town Planners, India.

Singh, M., & **Navak, S.** (July 2017). 'Impact Assessment of AMRUT'. International conference on 'Future of Cities: Opportunities and Challenges' organized by Institute for Town Planners, India (ITPI). Delhi, India.

ACHIEVEMENTS

Institute Post-doctoral Fellowship 2024, Indian Institute of Technology Bombay

IIT KGP Foundation International Internship Scholarship Award 2022

MHRD Graduate Aptitude Test in Engineering (GATE) Scholarship for securing GATE, 2015 with All Indian Rank 253

Leadership Award in organizing Zonal National Association of Students of Architecture (ZONASA) Convention 2012 from Global Alumni Association of IEST, Shibpur

SELECTED COURSES/ TRAININGS/ WORKSHOPS/ WEBINARS AND OTHERS ATTENDED

COURSES

Workshop on Agent Based Modelling Workshop by Indian Institute of Management Kozhikode, March 2025

Coursera certified course on 'Python Data Structures' by University of Michigan, March 2022

Faculty Development certified course on 'Pedagogy in Teaching Architectural Graphics and Presentation' organized by Council of Architecture and R.V. College of Architecture, Bengaluru, August 2023

Executive Course on 'Sustainable Urban Transport Planning and Evaluation' in 5th CTRG conference, India, 2019

Global Initiative of Academic Networks (GIAN) By MoE, Government of India:

- **Statistical and Econometric Methods in Transportation** by Prof. Simon Wasington (University of Queensland) at Indian Institute of Technology, Kharagpur, November 2018
- **Urban Traffic Modelling and Control** by Prof. R. (Jay) Jayakrishnan (University of California, Irvine) at Indian Institute of Technology, Guwahati, September 2018

TRAININGS & WORKSHOPS

PTV VISUM and Viswalk Training Course by PTV group, April 2021

Publishing in Academic Journals: An Author's Workshop' by Taylor & Francis Group and IIT Kharagpur, 2019

LATEX workshop on Technical Report Writing by IEEE, Indian Institute of Technology, Kharagpur, 2019

WEBINARS & OTHERS

Webinar on Introduction to Travel Demand Modeling and CUBE by Bentley Institute, 2020

"SAMSHODHANA"- Quiz on research paper reading skills conducted by JAIN DUniversity, Bangalore, 2020

AFFILIATION

Registered Architect under the affiliation of Council of Architecture (CoA), India with a License Number CA/2015/72404, Issued in 2015

Associate Member of Institute of Town Planners, India with a Membership Number AITP/2023/0631, Issued in 2023

OTHER PROFESSIONAL SERVICES AND VOLUNTARY ROLES

REVIEWER

- Transportation Research Part C: Emerging Technologies (Elsevier)
- Transportation Research Record (TRB) Conference and Transportation Research Record (SAGE)
- Journal of Transport Geography (Elsevier)
- Travel Behaviour and Society (Elsevier)
- Case Studies on Transport Policy (Elsevier)
- Transportation in Developing Economies (TIDE) (Springer)
- Transportation (Springer)
- International Social Science Journal (Wiley)

MEMBER OF ORGANIZING COMMITTEE

- Workshop on 'Urban Informatics and AI-driven Analytics' at ARP Department, IIT Kharagpur, April 2018
- INTCON event, 6th SPICMACY International Convention 2018 organized by IIT Kharagpur
- Member of ISOCARP to connect with global city and regional planners and professional community

SPECIAL INTERESTS

Heritage Exploration, Crafting, Culinary Streak, Arts, Paintings and Photography