



Dr. Md Saddam Hussain

Nationality: Indian **Date of birth:** 07/12/1991 **Gender:** Male

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ABOUT ME

With a background in Architecture from NIT Patna and advanced training from the RCG School of Infrastructure Design and Management, I earned my Ph.D. from IIT Kharagpur, focusing on pedestrian safety in India's mixed traffic conditions. My experience includes leading projects like the Varanasi Smart City Studio and SAFAR, using AI to inform policy on traffic safety, as well as collaboration with the Global Road Safety Partnership to enhance road safety and speed management. Currently a Senior Research Associate at AEEE, I specialize in sustainable transportation and road transport decarbonization, contributing to projects on fleet electrification in hilly regions, market transformation for electric two- and three-wheelers, and rural e-commerce logistics. My expertise in sustainable transport, energy efficiency, and policy research fuels my commitment to advancing electric vehicle adoption and sustainable urban mobility in India.

WORK EXPERIENCE

Senior Research Associate

Alliance for an Energy Efficient Economy [26/06/2023 – Current]

City: New Delhi | Country: India

- Market Transformation of Electric 2 and 3-Wheelers in India** - Led efforts to accelerate market penetration of electric two- and three-wheelers by developing strategies for policy support, stakeholder engagement, and consumer awareness to enhance market readiness.
- Electrification of Fleet Transport in the Himalayas (North-Eastern Focus)** - Spearheaded initiatives to electrify fleet transport in the challenging terrains of North-Eastern India, addressing region-specific logistical, environmental, and infrastructural constraints.
- Retrofitting of EVs in Tripura (Lead)** - Directed a pioneering project to retrofit internal combustion engine vehicles to electric in Tripura, setting a benchmark for cost-effective and sustainable vehicle transformation.
- Blueprint for EV Labs in Northeastern Technical Institutes** - Developed a comprehensive blueprint to establish EV-focused laboratories across technical institutes in the North-East, fostering regional talent and innovation in EV technology.
- Roadmap for EV-Centric ISBTs in Meghalaya and Assam (Lead)** - Designed a strategic roadmap to integrate electric vehicles into Inter-State Bus Terminals (ISBTs), aligning with state sustainability goals and facilitating EV adoption in public transportation.
- Green Mobility for Rural E-Commerce: Feasibility of Electric Two-Wheelers in Last-Mile Logistics (Lead)** - Conducted a feasibility study for deploying electric two-wheelers in last-mile logistics for rural e-commerce, focusing on economic and operational viability in underserved areas.
- Decarbonising India's Cold Chain and Transport – The Energy and Transport Nexus (Lead)** - Led the development of strategies to decarbonize cold chain logistics by promoting EV adoption and energy efficiency across refrigerated transport networks.
- Green Vehicle Rating** - Contributed to designing an evaluation tool that assesses vehicle performance based on health impact, total cost of ownership, and emissions, aiming to guide consumers and policymakers toward cleaner vehicle choices.

9. **Bankability of EVs and Charging Infrastructure in India** - Analyzed the financial viability of electric vehicles and charging infrastructure, providing insights to investors and stakeholders on the commercial sustainability of EV adoption in India.
10. **Organizing Committee for Energise 2023, FEED 2024, and Energise 2025** - Played an active role in organizing national events focused on energy efficiency and sustainable mobility, fostering discussions and partnerships across the industry.

Senior Research Fellow

Indian Institute of Technology Kharagpur [15/06/2019 – 25/06/2023]

City: Kharagpur | Country: India

1. **Pedestrian Safety Assessment under Mixed Traffic Conditions** - Developed innovative methodologies to evaluate pedestrian safety in India's complex traffic environments, providing insights to improve urban mobility and safety standards.
2. **Varanasi Smart City Studio (in collaboration with Georgia Tech)** - Led a project aimed at enhancing urban infrastructure for the Varanasi Smart City initiative, utilizing data-driven approaches to improve pedestrian and traffic management.
3. **SAFAR Project (in collaboration with Georgia Tech)** - Leveraged AI and data analytics to study traffic crash patterns and provide policy recommendations for accident prevention and traffic management improvements.
4. **Global Road Safety Partnership (IFRC)** - Contributed to initiatives focused on road safety regulations and speed management to promote safer road use, aligning with international best practices.
5. **IMPRESS Project** - Conducted an assessment on sustainable transport electrification, exploring the integration of renewable energy solutions to reduce environmental impact and support policy advancements.

Education researcher

Science and Heritage Initiative (SANDHI) [07/03/2016 – 07/09/2016]

City: Kharagpur | Country: India

1. Exploring pattern ideogram Swastika - A Universal Principle of Sustainability
2. Report writing and Incharge of publications

Architectural Intern

Dey Sarkar and Associates [01/07/2015 – 31/12/2015]

City: Kolkata | Country: India

1. Training as a part of 5th-year coursework in B.Arch.
2. Worked on various Residential and Commercial projects.

Architectural Intern

Archiplus Pvt. Ltd. [07/03/2012 – 07/2012]

City: Patna | Country: India

1. Detailing, working, and views of the proposed renovation of the Bihar electricity board head office.
2. Site visits and redevelopment plans for the Bihar government's conservation project under "Conserving forgotten historical structures."

EDUCATION AND TRAINING

Doctor of Philosophy (Ph.D.)

Indian Institute of Technology (IIT) Kharagpur [2017 – 2023]

City: Kharagpur | Country: India | Website: www.iitkgp.ac.in

Master of Technology (M.Tech.)

Indian Institute of Technology (IIT) Kharagpur [2015 – 2017]

City: Kharagpur | Country: India | Website: www.iitkgp.ac.in

Bachelor of Architecture (B. Arch.)

National Institute of Technology (NIT) Patna [2010 – 2015]

City: Patna | Country: India | Website: www.nitp.ac.in

LANGUAGE SKILLS

Mother tongue(s): Hindi

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Urdu

LISTENING B2 READING B1 WRITING A2

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Microsoft Office / Microsoft Excel / PTV VISUM / PTV VISSIM / PTV VISWALK / SSAM (Surrogate Safety) / SPSS / Power BI / R-Studio / ArcMap / GRASS / MS Project / Adobe Photoshop / Adobe Illustrator / Adobe After Effects / Adobe Premiere Pro / Python / QGIS / AutoCAD / Lumion / SketchUp

PUBLICATIONS

[2024]

[An integrated VISSIM-SSAM approach to predicting and mitigating pedestrian crashes and severity along urban crossings](#)

Md Saddam Hussain , Geetman Bahrha , Arkopal K. Goswami

[2022]

[Predicting pedestrian crash locations in urban India: An integrated GIS-based spatiotemporal HSID technique](#). Write here the description...

Hussain et. al., 2022

[2021]

[Assessing Impact of Urban Street Infrastructure on Pedestrian Safety Perception](#)

Hussain et. al., 2021

[2021]

[Study of Ambient Air Quality on Transport Road of Coal Mines –A case of Talcher mining region](#)

Prakash et. al. 2021

[2019]

Tools for Speed Management. Promoting Stronger Road Safety Regulations in India with an Emphasis on Safe Road, Speed management, Enforcement, and Public Awareness Hussain, M. S., Manoj. B.S., Goswami, A. K.

International Federation of Red Cross and Red Crescent Societies (IFRC), Switzerland

[2018]

[Using GIS to identify vehicle crash hot spots and unsafe crossroads–a case study of Kolkata](#)

Hussain et. al. 2018

[2018]

[Strategies for Augmentation of socio-economic infrastructure around Greenfield Airport – A case study of Dholera International Airport](#)

[2016]

The Chronicles of Swastika. Exploring the pattern and ideogram of Swastika- A universal principle of sustainability Hussain M. S., Mahapatra G., Singh S., & Paul A.

SANDHI, Cygnus, p. 199-226

CONFERENCES AND SEMINARS

[12/04/2022 – 14/04/2022] Washington D. C., United States of America

Predicting Pedestrian Crashes and Severity Using Pseudo-Safety Indicators- An Integrated Viswalk-SSAM Approach. 50th Annual Conference of the Urban Affairs Association

[12/04/2022 – 14/04/2022] Washington D. C., United States of America

India's Electric Vehicle Transition 2030: Perception analysis of Consumers and Manufacturers 50th Annual Conference of the Urban Affairs Association

[12/09/2021 – 15/09/2021] Japan

Prediction of Pedestrian Crash locations in Urban Areas: A GIS-Based Spatiotemporal Hotspot Analysis 14th International Conference of Eastern Asia Society for Transportation Studies (EASTS)

[02/03/2020 – 04/03/2020] Kolkata, India

Assessing Pedestrian Perception of safety based on Road attributes and build form: Case of Three Indian Cities. Second ASCE India Conference on "Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economies"

[07/01/2019 – 10/01/2019] Roorkee, India

Crash Analysis and Prediction Framework: Enhancing Safety through Roadway Infrastructure Augmentation International Conference, "Transportation Infrastructure Projects – Conception to Execution (TIPCE 2019)

[15/10/2018 – 19/10/2022] Kuala Lumpur, Malaysia

Using GIS to identify vehicle crash hot spots and unsafe crossroads –a case study of Kolkata, India Asian Conference on Remote Sensing

PROJECTS

LEAD RESEARCHER- VARANASI SMART CITY STUDIO INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, USA

A short-term collaborative project between Georgia Tech and IIT Kharagpur. The team's main focus was analyzing key areas in Varanasi and proposing mitigation/ corrective measures to aid in the overall development of Varanasi as a Smart city.

LEAD RESEARCHER- SMART AND INTEGRATED PEDESTRIAN SYSTEM DESIGN INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, MINISTRY OF EDUCATION (MOE) GOI

The primary tasks of the project included –(a) Spatiotemporal analysis of pedestrian incidents along urban streets; and (b) Pedestrian perception of safety in urban core areas.

LEAD RESEARCHER- SAFE & ACCESSIBLE FARE USING AI ON ROADS(SAFAR) COE IN ARTIFICIAL INTELLIGENCE IN IIT KHARAGPUR, OLA MOBILITY INSTITUTE INDIA

Integration of AI and data sciences with simulation to understand the traffic crash characteristics in India.

Understanding traffic accidents in India and suggesting local policies to prevent them using AI and Data Science.

SENIOR RESEARCHER- IMPACTFUL POLICY RESEARCH IN SOCIAL SCIENCE (EVS) INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, MHRD - GOVERNMENT OF INDIA

Assessment of emissions from thermal power plants due to energy demand from electric vehicles: Policy recommendations for renewable energy integration

SENIOR RESEARCHER- GLOBAL ROAD SAFETY PARTNERSHIP (GRSP) INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETY (IFRC), SWITZERLAND

Tools for Speed management, Promoting stronger Road Safety Regulations in India with an Emphasis on Safe Road, Speed Management, Enforcement, and Public Awareness

SENIOR RESEARCHER- TECHNOLOGIES FOR URBAN TRANSIT TO ENHANCE MOBILITY AND SAFE ACCESSIBILITY (TUTEM) INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, ASIAN DEVELOPMENT BANK (ADB), PHILIPPINES

To enhance the last-mile security and safety of transit passengers using technologies for Urban Transit to Enhance Mobility and Safe Accessibility (TUTEM)

SENIOR RESEARCHER- CONSULTANCY FOR MACKINTOSH BURN LTD. INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Assessment of traffic Impacts for the proposed multilevel car park (MLCP) at Alipore, Kolkata. Consultancy project for Mackintosh Burn LTD. (Govt. of West Bengal)

RECOMMENDATIONS

Name: DR. ARKOPAL K. GOSWAMI | Supervisor

ASSISTANT PROFESSOR, RCG SCHOOL OF INFRASTRUCTURE DESIGN & MANAGEMENT. INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Email: akgoswami@iitkgp.ac.in | Phone number: (+91) 3222284950

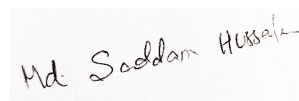
Name: Dr. Ankit Gupta | Co-supervisor

ASSOCIATE PROFESSOR, CIVIL ENGINEERING, INDIAN INSTITUTE OF TECHNOLOGY (BHU) VARANASI

Email: ankit.civ@iitbhu.ac.in | Phone number: (+91) 5427165376

I hereby declare that the information provided above is true to the best of my knowledge and belief. I take full responsibility for the accuracy of the details mentioned.

New Delhi



Dr. Md Saddam
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