

# ANINDYA K. DEBNATH

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## RESEARCH INTEREST

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Transportation System Engineering, Travel Behavior Modelling, Community-centric transportation, Shared Micro-mobility Planning, Transportation Safety and Accessibility

## EDUCATION

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<b>PhD Candidate</b> <i>Civil Engineering, University of Arkansas</i>	<i>Expected May 2026</i>
<b>Master of City and Regional Planning</b> <i>Georgia Institute of Technology</i>	<i>2017</i>
<b>Master of Urban and Regional Planning</b> <i>Bangladesh University of Engineering and Technology</i>	<i>2014</i>
<b>Bachelor of Urban and Regional Planning</b> <i>Bangladesh University of Engineering and Technology</i>	<i>2011</i>

## RESEARCH EXPERIENCE

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<b>Department of Civil Engineering, University of Arkansas</b> <i>Graduate Research Assistant and Manager ZeRo Lab</i>	<b>Fayetteville, AR</b> <i>Jan. 2021 - present</i>
<ul style="list-style-type: none"><li>• Investigate travel behavior and multimodal accessibility in small U.S. cities</li><li>• Design and administer surveys, secure IRB approval, analyze datasets</li><li>• Design, launch, and evaluate the Ride 4 SMILIES bikeshare for Fort Smith, AR, including KPIs and accessibility assessments (NSF Award Number: 2133379)</li><li>• Liaise with public officials, industry collaborators, and community partners across the SMILIES project.</li><li>• Plan and moderate focus group discussions (FGDs), workshops and translate insights into design requirements and policy briefs</li><li>• Mentor undergraduate and masters students</li><li>• Coordinate and oversee experimental activities and routine lab workflows</li><li>• Drive projects to on-time completion by tracking milestones and deliverables</li></ul>	

## EMPLOYMENT

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<b>Fort McPherson</b> <i>Development Fellow</i>	<b>Atlanta, GA</b> <i>May – Aug. 2016</i>
<ul style="list-style-type: none"><li>• Assisted with the land use redevelopment plan of Fort McPherson</li><li>• Assessed the resource inventory within Fort McPherson</li><li>• Conducted feasibility on transit-oriented development (TOD) for Fort McPherson MARTA Station</li></ul>	
<b>Department of Urban and Regional Planning (BUET)</b> <i>Assistant Professor (on study leave)</i>	<b>Dhaka, Bangladesh</b> <i>Feb. 2015 – present</i>
<ul style="list-style-type: none"><li>• Instructed undergraduate and graduate level courses on traffic engineering, transportation planning, statistics, Geographic Information System (GIS), participatory planning</li><li>• Supervised undergraduate and graduate theses</li><li>• Developed undergraduate and graduate course curriculum for ABET accreditation</li></ul>	
<b>Department of Urban and Regional Planning (BUET)</b> <i>Lecturer</i>	<b>Dhaka, Bangladesh</b> <i>Feb. 2011 – Jan. 2015</i>
<ul style="list-style-type: none"><li>• Instructed undergraduate level courses on traffic engineering, transportation planning, and statistics</li></ul>	

#### **PUBLICATION IN PEER-REVIEWD JOURNALS [PUBLISHED]**

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- [1] **Debnath, A. K., Mitra, S. K., (2026) “Perception of Transportation Challenges and Their Influence on Mode Choice in a Small US City: A Generalized Structural Equation Modeling Approach”** Journal of Transportation Research Interdisciplinary Perspective, Volume 36. DOI: <https://doi.org/10.1016/j.trip.2025.101789>
- [2] **Debnath, A. K., Ogungbire, A., Mitra, S. K., (2023) “From Stay-at-home to Reopening: A Look at How Ridesourcing Fared during the COVID-19 Pandemic in Chicago, Illinois”** Journal of Sustainable Cities and Society, Volume 98. DOI: <https://doi.org/10.1016/j.scs.2023.104837>.
- [3] **Zafri, N. M., Tabassum, T., Himel, M. R. H. and Sultana, R., Debnath, A. K. (2022) “Effect of Pedestrian Characteristics and their Road Crossing Behaviors on Driver Yielding Behavior at Controlled Intersections”** Journal of Safety Research, Volume 8.
- [4] **Nakshi, P., Debnath, A. K., (2020) “Impact of Built Environment on Mode Choice to Major Destinations in Dhaka”** Transportation research record, Volume 2675, Number 3, Page 281-296.
- [5] **Nakshi, P., Debnath, A. K. (2020) “Modal Mismatch and Accessibility Gap in Dhaka: A Time of Day based Approach”** Transportation research record, Volume 2675, Number 4, Page 379-392.
- [6] **Debnath, A. K. and Daisy, N.S., (2011) “Industrial Concentration as a Predictor of Slum Agglomeration in Dhaka Metropolitan Development Plan Area: A Spatial Auto Correlation Approach”** Journal of Bangladesh Institute of Planners, Volume-IV. URL: <http://www.bip.org.bd/journalBook/index>

#### **PUBLICATION IN PEER-REVIEWD JOURNALS [MANUSCRIPT UNDER REVIEW]**

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- [1] **Debnath, A. K., Mitra, S. K., (2025) “Is the Last Mile Walkable? Exploring Bikeshare-Induced Multimodal Accessibility in Small Urban Networks”** under review for Journal of Transport Geography.
- [2] **Debnath, A. K., Mitra, S. K., (2025) “Factors Influencing the Business Use of Personal Vehicles: Evidence From the 2022 National Household Travel Survey”** under review for Urban Studies.

#### **PUBLICATION IN PEER-REVIEWD JOURNALS [MANUSCRIPT UNDER PREPARATION]**

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- [1] **Debnath, A. K., Mitra, S. K., (2025) “Towards an Inclusive Theoretical Framework of Bikeshare Adoption in Low-income Communities: A Qualitative Approach”** under preparation for Transportation Research Record.
- [2] **Debnath, A. K., Mitra, S. K., (2025) “Developing a Community-Centered Bikeshare System for Small Cities: Lessons from Ride 4 SMILIES in Fort Smith, Arkansas”** under preparation for Sustainability.

#### **BOOK CHAPTERS**

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- [1] **Nakshi, P., Debnath, A. K., (2025) “Integrating Accessibility: A Critical Review of the Transportation Policies and Plans in Dhaka”** Book chapter of Sustainability in South Asian Cities, part of the book series of Advances in Geographical and Environmental Sciences, Springer Nature, Page 245-271.
- [2] **Daisy, N.S., Debnath, A. K., Rahman, N., Islam, I. and Hasan, M. M. U., (2013) “Community Perception on the Redevelopment of Old Dhaka based on Local situations”** in Jahan, S and Kalam, A. K. M. A. (ed), Dhaka Metropolitan Area and Its Planning: Problems, Issues and Policies, Bangladesh Institute of Planners, Dhaka, Bangladesh.

#### **CONFERENCE PRESENTATIONS**

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- [1] **Debnath, A. K., Mitra, S. K., (2025) “Is the Last Mile Walkable? Exploring Bikeshare-Induced Multimodal Accessibility in Small Urban Networks”** accepted for presentation at the 105<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 11 - 15 January 2026.

- [2] **Debnath, A. K., Mitra, S. K, (2025) “Developing a Community-Centered Bikeshare System for Small Cities: Lessons from Ride 4 SMILIES in Fort Smith, Arkansas”** at the 104<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 5- 9 January 2025.
- [3] **Debnath, A. K., Mitra, S. K, (2025) “Towards an Inclusive Theoretical Framework of Bikeshare Adoption in Low-income Communities: A Qualitative Approach”** at the 104<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 5- 9 January 2025.
- [4] **Debnath, A. K., Mitra, S. K, (2025) “Factors Influencing the Business Use of Personal Vehicles: Evidence From the 2022 National Household Travel Survey”** at the 104<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 5- 9 January 2025.
- [5] **Tuli, F. M., Debnath, A. K., Mitra, S. K, (2025) “Bridging the Divide: Unraveling Gender Differences in Post-Pandemic Shared Micromobility Usage Across the United States”** at the 104<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 5- 9 January 2025.
- [6] **Debnath, A. K., Mitra, S. K, (2024) “Work in Progress: Designing a Community-led Bike Share Program for a Small US City: Evidence from Fort Smith, Arkansas”** at the Annual Meeting of American Society for Engineering Education (ASEE) 22 - 25 June 2024.
- [7] **Debnath, A. K., Mitra, S. K, (2023) “How Does Daily Exposure to Transportation Challenges Affect Mode Choice in a Small City Transit Desert? Evidence from Fort Smith, Arkansas”** at the 102<sup>nd</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 8- 12 January 2023.
- [8] **Debnath, A. K., Mitra, S. K, (2022) “A Systematic Review of the Payment and Access Technology for Bike Share Programs in the United States”** at the Annual Meeting of Missouri Valley District Institute of Transportation Engineers 20- 21 April 2022.
- [9] **Debnath, A. K., Ogungbire, A., Mitra, S. K, (2022) “Impact of COVID-19 on Ridesourcing Usage: A Case Study of Chicago”** at the 101<sup>st</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 9- 13 January 2022.
- [10] **Nithila, A. N., Mitra, S. K, Debnath, A. K., (2022) “Examining the COVID-19 Pandemic Impact on Older Adults Activity Participation and Mode Usage in Arkansas”** at the 101<sup>st</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 9- 13 January 2022.
- [11] **Nakshi, P., Debnath, A. K., (2020) “Modal Mismatch and Accessibility Gap in Dhaka: A Time of Day based Approach”** at the 99<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 12- 16 January 2020.
- [12] **Nakshi, P., Debnath, A. K., (2020) “Does Built Environment Matter in Mode Choice? The Case of Major Destinations in Dhaka”** at the 99<sup>th</sup> Annual Meeting of Transportation Research Board (TRB) organized by the National Academy of Science 12- 16 January 2020.
- [13] **Hanif, F., Hossian, M. M. B., Debnath, A. K., (2019) “A Study on Mode Choice Behavior of Working Population in Dhaka: A Way towards Sustainable Transportation”** at the “International Conference on Sustainability in Natural and Built Environment 2019” organized by Global Cities for Scientific, Technological, and Management Research 19- 23 January 2019.
- [14] **Afroj, S., Fuad, N., Debnath, A. K., Hasan, M. M. U., (2019) “Sustainability of Car Sharing Service in Dhaka: A Case Study on Uber Users”** at the “International Conference on Sustainability in Natural and Built Environment 2019” organized by Global Cities for Scientific, Technological, and Management Research 19- 23 January 2019.
- [15] **Sreezon, A. Z., Hossian, M. M. B., Debnath, A. K., (2019) “A Comparative Public Transit Accessibility and Equity Assessment for Public Bus and MRT: A Case Study of Dhaka, Bangladesh”** at the 98<sup>th</sup> Annual Meeting of Transportation Research Board organized by the National Academy of Science 13- 17 January 2019.
- [16] **Hanif, F., Hossian, M. M. B., Debnath, A. K., (2018) “An Equity Analysis of Public Bus Service in Dhaka”** at the “Urban Transitions 2018” organized by Elsevier at Barcelona, Spain 25- 07 November 2018.

- [17] Tahsin, N., Tahsin, R., **Debnath, A. K.**, (2018) “**Mode Choice of Working Women in Dhaka Metropolitan City**” at the “Urban Transitions 2018” organized by Elsevier at Barcelona, Spain 25- 07 November 2018.
- [18] Shams, A., Mahmud, S., **Debnath, A. K.**, (2015) “**Towards a Methodology for Estimating Dynamically Optimized Parking Price in Motijheel Commercial Area**” in “International Conference - *Development and Democracy in Bangladesh: Problems and Prospects*” organized by Bangladesh Development Initiative (BDI) at University of California, Berkeley, 06- 08 November 2015.

## GRANTS

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**Debnath, A. K.** PI. Evaluation of Mass Rapid (MRT) on Public Transit Accessibility and Equity for Working Women of Dhaka City Using Multimodal Street Network, research grant awarded in 2019 by the Social Science Research Council (SSRC), Ministry of Planning, Bangladesh.

Jahan, S., **Debnath, A. K.** Co-PI. Density Zoning of Dhaka Metropolitan Development Plan (DMDP) Area research grant awarded in 2012 by the RAJUK (Development Authority of Dhaka, Bangladesh).

## GRANT WRITING EXPERIENCES

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**Research Team Member** 2025

Project Title: *Development of a Health-care Access Prioritization Index (HAPI) in Arkansas*  
Submitted for Rural Health Transformation Program to the  
Centers for Medicare & Medicaid Services (CMS) (Decision pending)

**Research Team Member** 2024

Project Title: *Who are willing to let go solo driving for work? A case study of university workers*  
Submitted for Research Needs Statement Solicitation to the  
Arkansas Department of Transportation (Unsuccessful)

**Research Team Member** 2022

Project Title: *(SMILIES) A community-based framework to develop Shared Micromobility for affordable-accessible housing*  
Submitted for Civic Innovation Challenge Program to the  
National Science Foundation (NSF) (Award Number: 2133379)

## INVITED TALKS AND ORGANIZED WORKSHOPS

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**Invited talk** (October 16, 2025). *Beyond the Discount: Designing Micromobility Systems That Work for Everyone*. Annual Meeting of the North American Bikeshare & Scootershare Association (NABSA).  
<https://nabsa.net/conference/2025conference/#agenda>

**Workshop organizer** (February 2022). “*Understanding Community Aspirations for Bikeshare Design Components*” attended by Ride 4 SMILIES bikeshare stakeholders at For Smith, AR

**Workshop organizer** (January 2020). Conducted two three - hour sessions at a five - day Training on “*Interactions between Land use and Transportation*” catered for a group of 30 personnel from Dhaka Transport Coordination Authority (DTCA).

**Workshop organizer** (October 2019). Conducted four three-hour sessions at a five - day Training on “*Planning, Managing, and Coordinating Urban Public Transport*” catered for a group of 30 personnel from Dhaka Transport Coordination Authority (DTCA).

## AWARDS AND HONORS

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**Meddin Emerging Researcher Scholarship** 2025

North American Bikeshare & Scootershare Association (NABSA)

**Graduate Student of the Year (Research)** 2025

Department of Civil Engineering

**Reginald R. 'Barney' & Jameson A. Baxter Graduate Fellowship** 2024

Graduate School and International Education, University of Arkansas

<b>Arkansas Academy of Civil Engineering Scholarship</b> Department of Civil Engineering	<b>2025</b>
<b>Graduate Travel Grant</b> Graduate School and International Education, University of Arkansas	<b>2023</b>
<b>Graduate Travel Grant</b> Graduate School and International Education, University of Arkansas	<b>2024</b>
<b>Doctoral Academic Fellow (DAF)</b> Graduate School and International Education, University of Arkansas	<b>2021-2025</b>
<b>Outstanding Student Project Award</b> Georgia Planning Association (GPA)	<b>2017</b>
<b>Fulbright Foreign Student Scholarship</b> The U.S. Department of State's Bureau of Educational and Cultural Affairs (ECA)	<b>2015</b>
<b>Prime Minister Gold Medal Award</b> University Grants Commission (UGC), Bangladesh	<b>2010</b>
<b>Best Undergrad Thesis Award</b> Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology	<b>2011</b>
<b>Dean's List Award (Academic Excellence)</b> Bangladesh University of Engineering and Technology	<b>2007 - 2011</b>
<b>Merit Scholarship (Academic Excellence)</b> Bangladesh University of Engineering and Technology	<b>2006 - 2011</b>
<b>Talent Pool Scholarship</b> Dhaka Education Board, Bangladesh	<b>2007 - 2011</b>

#### **STUDENT ADVISING AND MENTORSHIP**

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<b>Master's Thesis Supervisor</b> Paromita Nakshi (MURP, 2017) <i>Exploring Travel Behavior and Multimodal Accessibility in Dhaka</i> Bangladesh University of Engineering and Technology (BUET)	<b>2017 - 2020</b>
<b>Undergraduate Thesis Supervisor</b> Saiful Alam, Farhan Ishrak (BURP 2015) <i>Travel Behavior and Accessibility Change of the Circular Bus Service Users of Dhaka City</i> Bangladesh University of Engineering and Technology (BUET) Tasnim Tori, Dilruba Afroze (BURP 2014) <i>Exploring Vehicle Ownership and Mode Choice Behavior Pattern of Households of Dhaka City</i> Bangladesh University of Engineering and Technology (BUET) Anik Banerjee, Milan Saha (BURP, 2014) <i>Exploring Factors Affecting Road Crash Severity in Dhaka City Corporation Area</i> Bangladesh University of Engineering and Technology (BUET) Atif Zoha Sreezon, Md. Muntasir Bin Hossian (BURP, 2013) <i>Comparative Analysis of Accessibility to Employment Opportunities by Public Bus and MRT in Dhaka</i> Bangladesh University of Engineering and Technology (BUET) Fahmida Hanif, Mohammed Iftekhar Matin (BURP, 2013) <i>An Equity Analysis of Public Bus Service in Dhaka</i> Bangladesh University of Engineering and Technology (BUET) Anup Kumar Biswas (BURP, 2011) <i>Performance Evaluation of Ridesharing Services and Travel Pattern of their Users in Dhaka City</i> Bangladesh University of Engineering and Technology (BUET)	<b>2017 - 2020</b>

#### **PROFESSIONAL EXPERIENCE AND PROJECT SUPERVISION**

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<b>Project Co-PI</b> Project Title: <i>Density Zoning for Dhaka Metropolitan Planning Area</i> Awarded by and submitted to the Rajdhani Unnoyon Kartripakkha (RAJUK)	<b>Mar. 2019 – May 2019</b>
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<b>Project Team Member</b>	<b>Mar. 2019 – May 2019</b>
Project Title: <i>Preparation of Terms of Reference (ToR) for Preparation of Upazila Development Plan</i> Submitted for Upazila Town (Non-municipal) Master Plan Preparation and Basic Infrastructure Development Project (UTMIDP) to the Local Government Engineering Department (LGED), Bangladesh	
<b>Project Team Member</b>	<b>Dec. 2017 – Aug. 2018</b>
Project Title: <i>Rural Road Planning and Prioritization Model Development</i> Awarded by UKAID and submitted to the Local Government Engineering Department (LGED), Bangladesh	
<b>Project Team Member</b>	<b>Jun. 2014 – Sep. 2014</b>
Project Title: <i>Feasibility Study (Traffic Impact Assessment, Social Impact Assessment and Environmental Impact Assessment) of BRAC University Campus at Badda</i> Submitted to the RAJUK	
<b>Project Team Member</b>	<b>Mar. 2011 – Sep. 2013</b>
Project Title: <i>Preparation of Integrated Water Supply, Sanitation and Hygiene (WASH) Planning</i> Awarded by Unicef and UKAid, submitted to the Unicef	

## PROFESSIONAL AND COMMUNITY SERVICES

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<b>GirlTREC Workshop Organizer</b>	<b>July 2025</b>
Organized and conducted sessions to inspire 25 K-12 Girls from Fayetteville High School, AR	
<b>Webmaster</b>	<b>Jun. 2024 – May 2025</b>
Community Engagement Division, American Society for Engineering Education (ASEE).	
<b>Science Fair Project Judge</b>	<b>Dec. 2024</b>
Future City Competition, Fulbright Junior High School, Bentonville	
<b>GirlTREC Workshop Organizer</b>	<b>July 2024</b>
Organized and conducted sessions to inspire 25 K-12 Girls from Fayetteville High School, AR	
<b>Vice President</b>	<b>Nov. 2023 – Present</b>
ITE student chapter at the University of Arkansas, Fayetteville	
<b>GirlTREC Workshop Organizer</b>	<b>July 2023</b>
Organized and conducted sessions to inspire 25 K-12 Girls from Fayetteville High School, AR	
<b>President</b>	<b>May 2022 – Apr. 2023</b>
Bangladeshi Students Organization at the University of Arkansas, Fayetteville.	
<b>Graduate Representative</b>	<b>2021 – 2025</b>
Department of Civil Engineering, University of Arkansas, Fayetteville <i>Occasionally, represented transportation engineering graduate students while the prospective graduate students were touring the campus</i>	
<b>Organizing Committee Member</b>	<b>Aug. 2014</b>
Urban Oasis (A Student Idea Competition), BUET Alumni Association	
<b>Faculty Advisor</b>	<b>Sep. 2013 – Jul. 2015</b>
URP Students' Association of BUET, Bangladesh (USAB)	
<b>Reviewer</b>	
Peer-reviewed Journals and conferences: Transportation Research Board (TRB), Transportation Research Record (TRR), American Society for Engineering Education, Transportation Research Interdisciplinary Perspective.	

## ENTREPRENEURIAL TRAINING

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<b>Completed 7 Month Long Entrepreneurial Training offered by VentureWell</b>	<b>Jan. 2025 - Jul 2025</b>
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## MEMBERSHIPS

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- Student Member, American Society for Engineering Education (ASEE)
- Student Member, Institute of Transportation Engineers (ITE)
- Student Member, American Society of Highway Engineers (ASHE)