Sharmista (Mish) Debnath

ASHRAE Student Chapter - Atlanta | Active Score & Mode Score AP
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EDUCATION

- **Georgia Institute of Technology, Atlanta, GA, USA** *Jul 2024 – Dec 2025 (expected)*
  Master of Science in Architecture (High Performance Buildings specialization) **GPA** - 3.76 / 4.0
  Courses: Building Physics Modelling, Environmental Systems, Statistical Methods, Data Driven Methods, Computing Resilient Buildings, Surrogate Modelling for Urban Regeneration, Climate Change – Atmospheric Sciences
- **Manipal School of Architecture and Planning, MAHE, Manipal, Karnataka, India** *Jul 2019 – May 2024*
  Bachelor of Architecture; Minor in Smart Cities **GPA** - 8.74 / 10.0
  Courses: Architectural Design and Detailing, Building Construction and Materials, Building Performance and Compliance, Climate Responsive Architecture (3 credits) - Winter School by Manipal University Jaipur, India
  Ranked First – 3rd year and Practical Training *2021 – 2022, 2024*
  Highest standing in Architectural Design Course and best Portfolio – 3rd, 5th and 6th semesters *2020 - 2022*

WORK EXPERIENCE

- **AMPS Power Solutions - ARCO MURRAY Design Build, Chicago, Illinois** *May – Aug 2025*
  Energy Modelling Intern
  - Simulated, building performance (heating and cooling load, HVAC system sizing, lighting loads) and optimized building systems using IESVE and CBECC, to support energy code compliance requirements.
  - Provided solutions which reduced buildings annual energy cost by 23.6% - 28% for self-storage buildings.
  - Produced technical documentation and data analysis for IECC, ASHRAE and T-24 energy permits.
  - Enhanced and updated in-house calculation tool - "AMPS Solar heat map" for solar system sizing and payback period calculations while taking the state and federal incentives into account.
- **PSI Energy Pvt. Ltd., New Delhi, India (Green building consultancy firm)** *Feb – Jun 2023*
  Energy Analyst Intern
  - Conducted building performance analysis and optimized annual energy consumption for single family residential projects via DesignBuilder, focusing on load analysis, thermal comfort, airflow analysis and water optimization.
  - Performed daylight analysis, glare analysis and curated artificial lighting layout for 5 educational projects by the Government of India.
  - Worked on detailed building energy modelling and analysis for GRIHA[1] certification for institutional building.
  - Ensured compliance with local regulations and delivered compelling presentations during client meetings ensuring satisfactory results.
  - Assisted with training sessions for new team members on creating energy models to evaluate building performance.
- **City Architecture Bureau, New Delhi, India** *Jan – May 2023*
  Architectural Intern
  - Designed layouts and structured detailed construction documents including MEP drawings, interior drawing for various ongoing projects.
  - Developed conceptual designs, visualizations for large scale sports facility (stadium).
  - Supervised on-site inspections throughout various construction stages for project oversight.
- **School of Planning and Architecture (S.P.A.), New Delhi, India** *Jul 2022*
  Research Intern
  - Researched and investigated Thermal Comfort and Energy Efficiency for hostel dormitories in India.
  - Drafted detailed working drawings for a cold storage project for IIT Delhi.

SOFTWARE SKILLS

- **Building Performance Analysis:** IESVE, CBECC, DesignBuilder, Grasshopper plugins, Ecotect, eQUEST, Cimate Consultant, Dialux Evo
- **Data Analysis:** R programming, jmp, python
- **Architectural Design and Modelling:** Revit, AutoCAD, Rhino 3D, SketchUp
- **3D Rendering:** Lumion, Twinmotion, V Ray, Enscape
- **Presentations:** Photoshop, Illustrator, InDesign

ACADEMIC PROJECTS

- **Design Space Exploration for High Efficiency Buildings** *2025*
  Explored and constructed a computational design space for retrofitting building and performed sensitivity analysis to maximize space, visual comfort and minimize the overall annual energy consumption.
- **Quantifying Airflow Pathogen Dynamics to Optimize Ventilation and Filtration Strategies** *2025*
  Modelled and examined airborne pathogen risks and filtration (HEPA vs MERV 13) in a dynamic high-intensity environment using Computational Fluid Dynamics and Agent Based Simulation to optimize Indoor Air Quality for the occupants.
- **Calibrating a Net - Zero Corporate Office Space Promoting Occupants Health and Wellbeing** – *Bachelor's Thesis* *2024*
  Devised a zero-energy hybrid (naturally ventilated and conditioned) office, addressing decarbonization by implementing a mix of active and passive design features focusing on minimizing the Energy Performance Index (EPI) value and over CO_2 emissions.

CO-CURRICULAR ACTIVITIES

- Presented – "Energy Predictor" at Georgia Undergraduate Research Conference hosted by Emory Oxford College *2024*

[1]Green Rating for Integrated Habitat Assessment - equivalent to LEED