

Somdut Roy

Education

Georgia Institute of Technology

Dec 2022

PhD Transportation Engineering (Minor: Machine Learning)
GPA: 3.62/4.0

Aug 2019

MS Computational Science and Engineering
GPA: 3.81/4.0

The Data Incubator (TDI) Feb 2024

Data Science Fellowship

Indian Institute of Technology, Kharagpur


Jun 2016

B.Tech Civil Engineering
GPA: 8.24/10

Contact


4500 S Monaco St Apt
627, Denver CO (USA)

6786023220 

somdut.roy@gmail.com 

[somdut-roy](https://www.linkedin.com/in/somdut-roy) 

Somdut Roy 

[Somdut1994](https://github.com/Somdut1994) 

Languages

English, Bengali, Hindi

Skills



Professional Experience

Engineer II: Atkins Denver, CO

Multiple Projects

Data analysis and microsimulation expert

May 2023 - Present

- Leading inter-disciplinary consultancy in transportation projects all over the country, involving skills including big data analytics, simulation, etc.

Lead Code Developer: Georgia Institute of Technology

US Dept. of Energy

Digital Twin: Real-time Traffic Data Integration

Jan 2022 - May 2023

- Deployed Signal and Traffic Data Digital-Twin Interface in Chattanooga, TN
- Created relational database connection and integrated multiple systems for real-time KPI display [\[website\]](#)
- Currently contributing in publishing work on optimizing signals to reduce overall vehicle fleet emissions.

Graduate Research Assistant: Georgia Institute of Technology

Gwinnett County, GA

Emergency Vehicle Response Optimization with Preemption

Jul 2020 - Dec 2022

- Programmed and Built Software-In-the-Loop Simulation (SILS) model in a Micro-simulation software named VISSIM
- Developed a Connected Vehicle (CV)-enabled ML-based Prediction model for optimum preemption and defended PhD dissertation on the topic.

University of Florida

Connected and Autonomous Vehicle Micro-simulation

May 2020 - Jul 2020

- Impacted in a team effort in building a CV and Autonomous Vehicle behavior using VISSIM Simulation [\[published\]](#)
- Projected Vehicular Emission of the corridor using [EPA's MOVES model](#)

City of Atlanta

Digital Twin: Real-time Traffic Data Integration

Aug 2017 - Dec 2019

- Deployed Signal and Traffic Data Digital-Twin Interface [\[published\]](#)
- Created SQL connection and integrated multiple systems for real-time KPI display [\[website\]](#) and co-authored and assisted in dissertation for proposed data-imputation methodology using novel time-series analysis techniques.
«Link»

Key Coursework & Course Projects

NLP

User-Customized Restaurant Recommendation: Yelp Data

- Used Facebook's word-embedding library [fastText](#) for creating input matrix for Supervised Learning
- Headed group project and implemented Logistic Regression and SVM algorithms to build prediction-model for review-based Restaurant Recommender System

Honors

- 2018 Wayne Shackelford Scholarship
- 2012-2016 JBNSTS Scholarship
- 2012 KVPY Scholarship
- Regional Mathematics Olympiad
- National Physics Olympiad (top 1% Statewide)

Algorithm Design

Traveling Salesperson Problem

- Explored four different approaches for optimum solution, either exact or Local Search
- Researched and implemented published studies to create optimum solution
- Headed group in data visualization and report compilation. [«Report»](#)

Data Visual. & Analy.

Web-based App: New Smart-up Opening System

- Created dashboard to provide new start-up success possibility at a location in the form of a heat-map, using crucial analytics tools and software such as Python, SQL, Azure ML Studio, Hadoop and D3.js

Recent Conferences Participated in as a Presenter

AVS 2019

Investigation of Data Loss Patterns in Real-Time Connected Transportation Infrastructure Data

AVS 2019

Smart City Digital Twin – Connected Data-Driven Traffic Simulation Model

Regional UTC 2020

Development of Software in the Loop Simulation (SILS) Testbed for Emergency Vehicle Preemption

TRB 2022

Impact of Restricted Crossing U-Turns on Vehicular Emissions

TRB 2024

Data Quality Assessment Process for Real-Time Data-Driven Traffic Microsimulation of Smart Corridor

Publications

Smart City I

Smart city real-time data-driven transportation simulation

2018

Smart City II

Smart cities Atlanta–North Avenue

2019

Autonomous

Evaluation of the Operational Effects of Autonomous and Connected Vehicles through Microsimulation

2022

Digital-Twin I

Impact of connected corridor volume data imputations on digital twin performance measures

2022

Digital-Twin II

Development of a Connected Corridor Real-Time Data-Driven Traffic Digital Twin Simulation Model

2021

Positions of Responsibility

Volunteer

Govindas Altanta/ Food4Lives

2019-2021

- Cooked and Served food to underprivileged people in Downtown Atlanta, on a quarterly basis, provided them with donated clothes and items (participated in by other students from Georgia Tech and Georgia State as well)

Event Treasurer

Megalith: Largest Civil Engineering Tech Fest in South Asia

Service Volunteer

National Service Scheme (NSS)

- Served below poverty line families and guided them through paper-work to get Government sponsored Reservation benefits
- Tutored and mentored under-privileged kids for Scholarship