Divya Natekar

dyn2009@nyu.edu | (917)-309-6711 | Brooklyn, New York | LinkedIn | GitHub | Website

Education

New York University, Tandon School of Engineering — Brooklyn, NY
Master of Science - Urban Data Science, GPA: 3.58/4.0 — Sept 2024 - May 2026
- Courses: Data Analysis, Machine Learning, Virtual & Augmented Reality, Artificial Intelligence, Advanced Spatial Analytics, Urban Computing & Artificial Intelligence

Manipal University Jaipur — Jaipur, India
Bachelor of Technology - Computer Science & Engineering / Minor in Cloud Computing Applications, GPA: 7.7/10 — Jul 2019 - Jul 2023
- Courses: Big Data Analytics, Computer System Architecture, User Interface Design, Deep Neural Networks, Cloud Computing Applications

Sondervick College — Veldhoven, Netherlands
Cultural Exchange Program - Europe Meets India (EUMIND) — Jul 2015

Research Interests

Urban Artificial Intelligence; Agent-Based Modeling; Retail Mobility Modeling; Human Mobility Analysis; Spatial Data Science; LiDAR Point Cloud Processing; Explainable Urban Models; Large Language Models for Urban Analytics

Research

Thinking on the Move: Agent-Based Retail Simulation for Downtown Brooklyn — Sept 2025 - May 2026
NYU Center for Urban Science + Progress & Downtown Brooklyn Partnership
(Project Sponsor: Mark Landolina, Senior Director, Real Estate and Economic Development, Downtown Brooklyn Partnership; Mentor: Prof. Takahiro Yabe, Assistant Professor, Department of Technology Management and Innovation and CUSP, NYU Tandon)
- **Agent-Based Urban Simulation:** Developed an agent-based retail simulation framework for analyzing lunchtime mobility and restaurant choice behavior in Downtown Brooklyn.
- **LLM-Enhanced Retail Modeling:** Integrated large language models, gravity-based retail models, and spatial interaction methods to model qualitative dining preferences beyond distance-based assumptions.
- **Urban Data Integration:** Worked with mobility datasets, restaurant review embeddings, and urban POI data to evaluate underserved retail corridors and consumer behavior patterns.
- **Planning Decision Support:** Supported stakeholder-oriented retail planning and intervention analysis through predictive urban simulations.

Transient Object Removal from Urban LiDAR Point Clouds — Jun 2025 - Aug 2025
NYU CUSP Summer Guided Research
(Mentor: Prof. Debra Laefer)
- **Machine Learning Workflow:** Designed and implemented filtering workflows to remove transient urban objects such as pedestrians and vehicles from LiDAR point cloud scans.
- **3D Urban Modeling:** Improved fidelity and consistency of 3D urban models using spatial filtering and point-cloud processing techniques.
- **Research Recognition:** Selected for the NYU Tandon CUSP Experiential Learning Scholarship for Summer 2025 guided research.
- **Presentation:** Presented research findings at the BATWorks Climate Event and NYU CUSP Fall 2025 Research Showcase.

Urban Wildfire Risk Prediction using Remote Sensing and Deep Learning — 2026
NYU Center for Urban Science + Progress
(Mentor: Prof. Rishabh Chauhan)
- **Remote Sensing Pipeline:** Developed an urban wildfire risk prediction pipeline using MODIS satellite imagery, NASA FIRMS wildfire datasets, and deep learning methodologies.
- **Model Development:** Implemented machine learning workflows in Python and Google Colab using Hugging Face and PyTorch-based architectures.
- **Fine-Tuning Exploration:** Explored parameter-efficient fine-tuning methods including LoRA and PEFT for wildfire classification and prediction tasks.
- **Spatial Visualization:** Generated spatial visualizations and geospatial outputs for urban environmental risk assessment.

Projects

Mech-On-Wheels — 2020

Google Startup Weekend Honorable Mention

- Developed a prototype emergency roadside-assistance application connecting users with nearby mechanics during vehicle breakdowns.
- Designed a ride-hailing-inspired workflow to reduce response time and operational inefficiencies during vehicle emergencies.

Experience

L&T Technology Services (LTTS) Airoli, India
Software Development Intern Jan 2023 - Jul 2023

- **Backend Development:** Built consumer and backend components for a proof-of-concept healthcare data platform integrating Connected Wearable Devices with the Philips HSDP cloud ecosystem.
- **Real-Time Data Engineering:** Developed real-time data ingestion and processing pipelines using Java Spring Boot, Apache Kafka, and Spring Vault.
- **Cloud Infrastructure:** Provisioned and managed cloud infrastructure using Terraform and Microsoft Azure services.
- **DevOps & APIs:** Implemented CI/CD workflows through Azure DevOps, performed API testing with Postman, and documented services using Swagger within Agile development workflows.
- **Data Analysis:** Conducted data analysis and visualization workflows in Python to generate insights from healthcare datasets.

Leadership & Involvement

IEEE Student Branch, Manipal University Jaipur Jaipur, India
Senior Coordinator Jun 2020 - Jun 2021

- Contributed to the IEEE Delhi Section and supported initiatives through the IEEE Women in Engineering Club.
- Assisted in organizing workshops, seminars, and outreach events promoting diversity and participation in STEM disciplines.

Randomize(); Computing Club, Manipal University Jaipur Jaipur, India
Head of Programs Jun 2020 - Jun 2021

- Led planning and execution of technical seminars and programming events for the university computing community.
- Coordinated a seminar on "Python Workload in Azure" in collaboration with Microsoft MVP Karthikeyan VK and the PyJaipur community.

Additional

Programming & Data Science: Python, Java, C, C++, SQL, JavaScript, HTML, CSS, Pandas, NumPy, Scikit-learn, TensorFlow, Keras, XGBoost, Matplotlib, Power BI

Urban Analytics & Geospatial Computing: GIS, QGIS, Spatial Data Analysis, Agent-Based Modeling, LiDAR Processing, CloudCompare, 3D Modeling, Mobility Data Analytics

Artificial Intelligence & Machine Learning: Large Language Models, Deep Learning, Clustering, Time Series Analysis, Remote Sensing, Computer Vision, Explainable Urban AI

Cloud & Software Engineering: Microsoft Azure, Azure DevOps, Terraform, Docker, Google Cloud Platform, Java Spring Boot, Apache Kafka, Git, Postman, Swagger

Certifications: Google Cloud Certifications: Baseline ML & AI, Infrastructure, Networking Fundamentals, Cloud Security