

# MAMADOU BARRY

Cornell, Clara Dickson Hall. Ithaca, NY 14850 | [mhb239@cornell.edu](mailto:mhb239@cornell.edu) | +1 (929) 278-1937

## EDUCATION

Cornell University, College of Engineering	Ithaca, NY
Bachelor of Science in Mechanical Engineering	Expected May 2028
♦ Coursework: Intro to Computing: A Design and Development Perspective, Physics of Mechanics & Heat, Calculus III, Thermodynamics, Statics & Mechanics of Solids, Electricity & Magnetism	
Pre-Collegiate Summer Scholars program (PSSP)	June 2024 — August 2024
♦ Coursework: Calculus I, Operations Research, Spatial Visualization	
Engineering summer Math Research Institute (ESMI)	June 2025 — August 2025
♦ Coursework: Differential Equations	

## EXPERIENCE

Engineering Summer Math Research Institute (ESMI)	Ithaca, NY
Student Researcher	Summer 2025
<b>Project:</b> Stochastic Queue Jockeying & Deterministic Platoon Optimization for Autonomous Vehicle Bottleneck Flow.	
♦ Analyzed traffic efficiency improvements across I-95 at SR-4 (Fort Lee, NJ) and I-285/I-85N (Atlanta, GA), demonstrating measurable improvements in sustained average vehicle speed compared to observed congestion metrics.	
♦ Designed and implemented a queueing-theoretic model (M/M/1) to simulate autonomous vehicle traffic flow under bottleneck conditions, incorporating stochastic lane-jockeying behavior.	
♦ Developed a deterministic platoon optimization model by converting real-world 24-hour speed/traffic profiles into fixed arrival streams, enabling comparison against U.S. highway bottleneck case studies.	
♦ Presented at a symposium, showcasing data-driven insights into AV platooning and queueing strategies as scalable tools for future traffic management systems.	
NYC Department of Youth & Community Development (DYCD)	Brooklyn, NY
Summer Youth Employment Program (SYEP) Intern	Summer 2022
♦ Organized and coordinated a summit aimed at educating youth on the critical issue of gun violence	
♦ Partnered with city-wide organizations to plan and execute community-building events that fostered engagement and strengthened local connections	
♦ Distributed weekly meals to low-income areas	
♦ Cultivated strong communication and teamwork skills through effective collaboration and active participation in group initiatives	
♦ Engaged in team meetings and community events that strengthened social, civic, and leadership skills	
Cornell University Dining (North Star Dining)	Ithaca, NY
Student Dining Associate	February 2025 — Present
♦ Delivered friendly and professional customer service to a diverse student and faculty community.	
♦ Strengthened communication skills through interaction with customers and coordination with team members.	
♦ Collaborated effectively with coworkers to ensure efficient service during peak dining hours and special events.	
♦ Supported operations including food preparation, restocking, and maintaining health and safety standards.	

## SKILLS

- ♦ Awards: NYC State of Civic Readiness, Ryan Scholar
- ♦ Languages: English (fluent), Fulani (native), French (Intermediate)
- ♦ Technical Skills: Python, CAD-Fusion 360, Microsoft Office, Google Suite