

CELESTE GROUX

Ithaca, NY | [Email](#) | [Website](#) | [LinkedIn](#)

EDUCATION

Cornell University, Ithaca, NY, USA

PhD in Operations Research and Information Engineering, Expected May 2028 | NSERC PGS-D Fellow, GPA: 3.94/4.0

McGill University, Montreal, QC, Canada

B.Sc. Honours Applied Mathematics, Minor in Computer Science, 2022

EXPERIENCE

Graduate Student Researcher, Cornell University – Ithaca, NY, USA

May 2024 – Present

PopWheels Industry Collaboration – Battery-Swapping Operations

- Led development of a modelling and discrete-event simulation framework for a NYC e-bike battery-swapping startup, using multi-year operational data to estimate station capacity and service reliability against an 85% state-of-charge target.
- Designed and benchmarked multiple online charging policies for individually controlled cabinets; recommended greedy charging over the company's proposed priority strategy, informing the charging policy selected for its new cabinets.
- Recovered previously unused location data and developed interpolated customer trajectories and time-varying heat maps to characterize travel patterns; visualizations were used by the CEO in investor and fundraising pitches.
- Partner biweekly with CEO and technical team to translate operational questions into quantitative analyses, communicate findings, diagnose data issues, and develop recommendations.
- Supervised an undergraduate researcher for one year, setting weekly priorities and providing technical guidance on simulation and data-analysis work.

Adaptive Experimental Design

- Developing multi-stage adaptive allocation algorithms for experiments with unknown variability across multiple treatments and objectives.
- Deriving finite-sample performance guarantees and lower bounds to characterize the quality of proposed allocation methods.

Performance Measurement Analyst

May 2023 – August 2023

Canadian National Railway – Montreal, QC, Canada

- Interviewed stakeholders to understand an IT service process, identify tracking gaps, and propose KPI and data-collection improvements.
- Designed and presented a Power BI dashboard to track process performance, incorporating feedback from senior leadership.

Undergraduate Research Assistant | DAAD RISE Award

May 2022 – August 2022

Technische Hochschule Ingolstadt – Ingolstadt, Germany

- Developed iterative Python search algorithm for a combinatorial optimization problem, integrating computational social choice theory through MiniZinc optimization with Copeland scores and Pareto constraints.

Undergraduate Research Assistant | NSERC USRA Award

May 2021 – August 2021

McGill University – Montreal, QC, Canada

- Analyzed Montreal Ville-Marie parking data in Python for optimization project studying policies to reduce the social costs of urban parking.
- Developed 2 stage parking-occupancy forecasting method with time-series clustering and neural networks to improve prediction accuracy.

Cloud Operations & Infrastructure Intern

May – August 2020

TC Energy – Calgary, AB, Canada

- Automated server-patching workflows using PowerShell and SCCM, generating more than \$10k in annual savings while supporting cloud and virtual infrastructure across AWS, Nutanix, and vCenter.

SELECTED TECHNICAL PROJECTS

Dynamic Pricing for Shared Resources – Python

Modeled pricing incentives for rechargeable shared resources and evaluated effects on demand timing, welfare, and revenue through simulation.

Temporal Graph Neural Networks – Python

Evaluated modifications to temporal GNN message-passing methods for link-prediction tasks in a graduate-level research project.

SKILLS

Python; PowerBI; stochastic modeling; discrete-event simulation; mathematical optimization

LEADERSHIP

President, Cornell Indigenous Graduate Student Association, 2025 – 2026

Secured maximum \$50K in grant funding by leading proposal development and budget; managed a three-person committee, university partnerships, and biweekly programming for 25+ graduate students.