

RAHUL ROY

Ph.D. Student (Operations) | UNC Kenan-Flagler Business School

[in linkedin.com/in/rroy09](https://www.linkedin.com/in/rroy09) [rroy09.github.io](https://github.com/rroy09)

github.com/rroy09 [@ rahulroy@unc.edu](mailto:rahulroy@unc.edu)

[\(+1\) 9193606151](tel:+19193606151) [Chapel Hill, NC, US](#)

EDUCATION

Present Aug 2020	Ph.D. in Operations (Business Administration), UNC Kenan-Flagler Business School, US <ul style="list-style-type: none">● Key Modules : Foundations of Optimization, Advanced Optimization, Stochastic Models in Operations Research, Econometric Theory, Applied Econometric Analysis, Advanced Machine Learning● Research Interests : Nonlinear Optimization, Machine Learning, Sequential Decision Analytics
Mar 2020 Oct 2018	M.Sc. by Research in Innovation (Class - Distinction), Lancaster University Management School, UK <ul style="list-style-type: none">● Investigated the attributes that affect energy demand when clusters of electric vehicles (EVs) draw power from low-voltage (LV) distribution networks● Evaluated statistical models, scalable machine learning systems, and artificial neural networks for scenario-based forecasting of energy consumption by EVs from electricity grids
Sep 2018 Oct 2017	M.Sc. in Business Analytics (Class - Distinction), Lancaster University Management School, UK <ul style="list-style-type: none">● Key Modules : Applying Statistical Models in Business, Stochastic Modeling, Optimization & Heuristics, Forecasting, Data Mining, SAS● Research Project : Proposed the novel idea of <i>Mixed Uncertainty Sets</i> to increase the breadth of parameter uncertainty in robust optimization problems and explored better out-of-sample performance than classical approaches via an extensive computational study using a shortest-path problem based on real-world data
June 2013 May 2009	B.Tech. in Electrical Engineering (GPA - 9.34/10), National Institute of Technology, Patna, India <ul style="list-style-type: none">● Key Modules : Mathematics - I/II/III, Electrical Machines, Power System (Operations, Design & Control), Network & Control Theory, Microprocessors, Electrical Instruments, Power Electronics● Academic Project (Coupled Resonators) : Led a team of 6 to design and construct a wireless system capable of transferring non-radiative electric power via resonance magnetic coupling● Academic Project (Solar Power Satellite) : Led a team of 6 to design and construct a synchronously rotating solar-powered system for point-to-point wireless transfer of electric power via microwaves

EXPERIENCE

Jan 2020 June 2019	Data Scientist, BT, UK <ul style="list-style-type: none">● Project Manager (<i>Optimizing Customer Interactions</i>) as part of Knowledge Transfer Partnership (KTP) program in collaboration with Innovate UK, University of Essex and BT● Explored and developed machine learning models that leveraged data across BT's broadband channel to optimize interactions with customers● Increased BT's revenue savings by an estimated 160% by developing and proposing a robust machine learning modeling framework for churn prediction of BT's broadband consumers● Optimized feature space in churn model by 85% by proposing customizable feature selection using L1 regularization
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Sep 2019 Oct 2018	Graduate Researcher, Centre for Global Eco-Innovation (Lancaster University), UK <ul style="list-style-type: none"> Developed a suite of models (statistical models, scalable machine learning systems, and LSTMs) for scenario-based forecasting of energy consumption by EVs as part of the Electric Nation trials Evaluated and proposed different variants of LSTM Networks (Vanilla vs Stacked, Unidirectional vs Bidirectional, and Encoder-Decoder vs Vector-Output) across 3 distinct clusters of EVs based on their battery ratings for single-step and multi-step scenario-based forecasting of energy consumption by EVs from electricity grids
May 2017 May 2015	Assistant Manager (Retail Operations) Executive (Retail Operations), BPCL, India <ul style="list-style-type: none"> Led supply chain strategy and planning in retail operations for the distribution of petroleum oil Improved the supply chain lead time by 33% by persuading the central management to implement VTS in the entire transportation fleet for lead time optimization Led BPCL's Patna retail territory to highest pan-India sales in branded gasoline in 2015-16
May 2015 June 2013	Officer (Pipeline Operations) GET (Pipeline Operations), BPCL, India <ul style="list-style-type: none"> Supervised supply chain strategy and planning in petroleum pipeline operations Achieved nil operational loss time for Mathura pipeline section in 2014-15



SKILLS

Programming	Python, R
Frameworks	TensorFlow, Shiny
Version Control	Git
Specializations	Machine Learning, Deep Learning, Forecasting, Operations Research

AWARDS | HONORS

Research Scholar M.Sc. by Research in Innovation, Lancaster University Management School, UK	2018 - 19
Academic Excellence Scholar M.Sc. in Business Analytics, Lancaster University Management School, UK	2017 - 18
Gold Medalist B.Tech. in Electrical Engineering, National Institute of Technology, Patna, India	2013
ONGC Scholar B.Tech. in Electrical Engineering, National Institute of Technology, Patna, India	2012 - 13

PUBLICATIONS

Understanding controlled EV charging impacts using scenario-based forecasting models : Poster Rahul Roy, Trivikram Dokka, David A. Ellis, Esther Dudek, Paul Barnfather  https://doi.org/10.1145/3447555.3466573	June 2021
Mixed uncertainty sets for robust combinatorial optimization Trivikram Dokka, Marc Goerigk, Rahul Roy  https://doi.org/10.1007/s11590-019-01456-3	July 2019