

# RAHUL ROY

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

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## EDUCATION

Present Aug 2020	<b>Ph.D. in Operations Management (Business Administration), UNC Kenan-Flagler Business School, US</b> <ul style="list-style-type: none"><li>Research interests are aimed at answering how Machine Learning can help in realizing optimal policies across industries amidst uncertain scenarios. More specifically, leveraging Reinforcement Learning besides conventional Machine Learning to enable policy-makers to optimize decisions under uncertainties</li><li>Advisor : Jayashankar Swaminathan</li></ul>
Mar 2020 Oct 2018	<b>M.Sc. by Research in Innovation (Class - Distinction), Lancaster University Management School, UK</b> <ul style="list-style-type: none"><li>Investigated the attributes that affect energy demand when clusters of electric vehicles (EVs) draw power from low-voltage (LV) distribution networks</li><li>Evaluated statistical models, scalable machine learning systems, and artificial neural networks for scenario-based forecasting of energy consumption by EVs from electricity grids</li></ul>
Sep 2018 Oct 2017	<b>M.Sc. in Business Analytics (Class - Distinction), Lancaster University Management School, UK</b> <ul style="list-style-type: none"><li><b>Key Modules :</b> Applying Statistical Models in Business, Stochastic Modeling, Optimization &amp; Heuristics, Forecasting, Data Mining, SAS</li><li><b>Research Project :</b> 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</li></ul>
June 2013 May 2009	<b>B.Tech. in Electrical Engineering (GPA - 9.34/10), National Institute of Technology, Patna, India</b> <ul style="list-style-type: none"><li><b>Key Modules :</b> Mathematics - I/II/III, Electrical Machines, Power System (Operations, Design &amp; Control), Network &amp; Control Theory, Microprocessors, Electrical Instruments, Power Electronics</li><li><b>Academic Project (Coupled Resonators) :</b> Led a team of 6 to design and construct a wireless system capable of transferring non-radiative electric power via resonance magnetic coupling</li><li><b>Academic Project (Solar Power Satellite) :</b> 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</li></ul>

## EXPERIENCE

Jan 2020 June 2019	<b>Data Scientist, BT, UK</b> <ul style="list-style-type: none"><li>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</li><li>Explored and developed machine learning models that leveraged data across BT's broadband channel to optimize interactions with customers</li><li>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</li><li>Optimized feature space in churn model by 85% by proposing customizable feature selection using L1 regularization</li></ul>
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Sep 2019 Oct 2018	<b>Graduate Researcher, Centre for Global Eco-Innovation (Lancaster University), UK</b> <ul style="list-style-type: none"> <li>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</li> <li>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</li> </ul>
May 2017 May 2015	<b>Assistant Manager (Retail Operations)   Executive (Retail Operations), BPCL, India</b> <ul style="list-style-type: none"> <li>Led supply chain strategy and planning in retail operations for the distribution of petroleum oil</li> <li>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</li> <li>Led BPCL's Patna retail territory to highest pan-India sales in branded gasoline in 2015-16</li> </ul>
May 2015 June 2013	<b>Officer (Pipeline Operations)   GET (Pipeline Operations), BPCL, India</b> <ul style="list-style-type: none"> <li>Supervised supply chain strategy and planning in petroleum pipeline operations</li> <li>Achieved nil operational loss time for Mathura pipeline section in 2014-15</li> </ul>



## SKILLS

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

## AWARDS | HONORS

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

## PUBLICATIONS

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