

Niharika Reddy Peddinenikalva

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MRes student at STOR-i Centre for Doctoral Training interested in applications of statistics and operational research in Healthcare, Logistics, Transport and Supply Chain industries.

Education

Statistics and Operational Research (MRes), Lancaster University Oct 2024 – Present

- MRes programme at the Statistics and Operational Research (STOR-i) Centre for Doctoral Training at Lancaster University.
- Modules in Programming for Reproducible Research; Inference; Optimisation; Simulation; Probability; Contemporary topics in Statistics and OR, among others.

Mathematics (MMath Hons), University of Edinburgh Sep 2020 – May 2024

- *First Class Honours* with courses such as: Fundamentals of Operational Research; Fundamentals of Optimization; Linear Programming, Modelling and Solution; Industrial Mathematics; Numerical Methods for Data; Machine Learning in Python; Numerical Linear Algebra; Mathematical Biology; Statistical Case Studies; Generalised Regression Models, Statistical Computing (ranking 1st in cohort), Incomplete Data Analysis; Topics in Applied Operational Research; Risk and Logistics; Integer and Combinatorial Optimization.

Vidya Niketan School, Bangalore Jun 2017 – May 2019

- ISC Science school topper with average of 97.4%. Subjects: Mathematics (97%), Physics (97%), Chemistry (99%), Biology (99%) and English (95%).

Projects

Mathematics Dissertation, University of Edinburgh Sep 2023 – Mar 2024

- Topic: ‘*Mathematical Optimization for Scheduling Problems*’ under the supervision of Dr. Sergio García Quiles, University of Edinburgh. (Achieved Grade: 79%)
- Performed a literature survey of Scheduling Problems and the Nurse Rostering Problem.
- Implemented a hybrid algorithm using metaheuristics (VNS) to solve a formulation of the Nurse Rostering Problem to compare with exact methods.

College Vacation Scholarship, University of Edinburgh Jun 2022 – Jul 2022

- Topic: “*Assessing Spatial Point Processes and Predictive Methods in a Bayesian Context*” under the supervision of Prof. Finn Lindgren, University of Edinburgh.
- Studied homogenous and inhomogeneous Poisson point processes and the theory of goodness-of-fit assessment for such models; Explored the assessment methods for the models using a frequentist approach and applied these methods in a Bayesian setting.
- Used the “inlabru” package in R to implement these Bayesian methods on models built using “inlabru”. Contributor to the “inlabru” package in R (see the vignette contributed [here](#) and the package documentation [here](#)).

Statistical Case Studies, University of Edinburgh Sep 2022 – Apr 2023

- Implemented linear regression models in R to determine risk factors for dementia and obesity using SHARE data; Implemented classification and regression models in R to predict selling prices of houses given a popular dataset. (Achieved Grade: 69%)
- Used techniques including data cleaning, EDA, feature selection, validation and other machine learning techniques such as lasso and ridge regression.

Predicting Hotel Cancellations, University of Edinburgh Feb 2023 – Apr 2023

- Predicted hotel cancellations by building supervised learning classification models including neural networks, logistic regression, decision trees and random forests using “scikit-learn” and “tensorflow”. Discussed policy recommendations to evade the negative effects of cancellations. (Achieved grade: 82%)

Power Generation Case Study, University of Edinburgh Feb 2023 – Apr 2023

- Used Linear Programming models in XPress to maximize profits of a power generation company; Made recommendations for alternative power sources by forecasting profits/losses under varying seasonal and weather conditions. (Achieved grade: 79%)

Experience

Resident Assistant, University of Edinburgh Aug 2021 – Jun 2024

- Solving communal issues and signposting repairs for residents; Organising and planning events monthly for residents individually or as part of a team.

Summer Intern in Technology Consulting, PwC UK Jul 2023 – Aug 2023

- Worked with UCL on a project to deliver a Cloud based product to improve the efficiency of UCL’s Admissions process; Attended and contributed to workshops with the client at the design stage of the project; Assisted Data and Integration teams with data mapping tasks to design and build the data model for the project.
- Undertook training in PowerBI, Tableaux, MS PowerApps and Azure.

Research Assistant, University of Edinburgh Sep 2022 – Jun 2023

- Classifying lecture activities using the “FILL+” protocol; Compiling statistical reports and analyses of lectures using RStudio and MS Excel which were provided to lecturers with a summary of data about their classroom practices to encourage reflection of teaching strategies.

Voluntary Work

MathPALS Leader, EUSA Sep 2021 – Apr 2022

- Supported first year students taking year one mathematics courses by leading discussion on course contents and facilitating problem solving session; Led weekly sessions and curated exercise sheets with solutions for content included in first year maths courses.

Volunteer Teacher, Skylight Academy Sep 2019 – Mar 2020

- Conducted English and Mathematics lessons for students in grades 1 to 6 to bring students in lower sets to the same academic level as their peers.

Academic Interviewer, University of Edinburgh Sep 2021 – Feb 2022

- Conducted interviews with Academics in the School of Mathematics to capture their interests (mathematical and otherwise), backgrounds, career highlights and current research work; Improved writing and editorial skills involving mathematical jargon that can still be comprehended by the average reader.

Skills

Programming skills: Python (several packages), RStudio (several packages), Xpress.

Soft skills: Teamwork, Time management, Perseverance, Organisation, Leadership, Agile.

Interests

Music, Hiking, Repurposing waste into crafts/home décor, Quilling, Calligraphy, Bouldering.