



# **Operations Research Society of South Africa**



## **Category IV Recognition Award**

(To an upcoming member of ORSSA of age 35 or below for excellence in operations research practice)

## **Jessica Rees**

**Citation.** *By Lieschen Venter, on behalf of the Executive Committee of ORSSA.*

Jessica Rees is nominated for her contributions and achievements in the field of Operations Research, specifically in the realm of Data Science and Natural Language Processing. Her exemplary academic background, remarkable professional journey, and significant contributions to the application of Operations Research principles have set her apart as a distinguished leader and innovator.

Jessica's academic journey is marked by excellence and dedication. She completed her Bachelor of Business Science (Hons) degree in Computer Science and Statistics at the University of Cape Town with remarkable distinction. Her scholarly pursuits were underscored by her top performance as the best student in 2nd and 3rd year Statistics, as well as 2nd year Computer Science. Additionally, she achieved the honour of being placed on the Dean's Merit List for all four years, along with receiving the UCT Commerce Faculty Scholarship.

She continued her pursuit of knowledge at the University of Pretoria, earning a Master of Information Technology degree with a focus on Complex Network Theory and Big Data Science. Her master's degree journey was characterized by the same exceptional distinction, culminating in a dissertation that utilized Complex Network Theory to analyze routing in workflow processes.

As a Certified Analytics Professional (CAP) certified Senior Data Scientist at Discovery Limited, she has demonstrated exceptional proficiency in applying Operations Research principles to real-world challenges. She has pioneered the establishment of a center of excellence for Natural Language Processing (NLP) within the Discovery Group, leading initiatives that harness the power of transformer-based Large Language Models for contextual question understanding and knowledge provisioning.

Her leadership extends to architecting large-scale solutions for automating real-time NLP models, including sentiment analysis, topic modelling, emotion identification, and speech-to-text technology. Her management skills are evident in the successful direction of a team of data scientists with a focus on operations analytics, particularly in the domain of NLP. She has also placed multiple times at Discovery's annual global actuarial conference and she lead the winning team in 2023.

Jessica's contributions have had a significant impact on her organization and the broader field of Operations Research. She has pioneered the development, production, and maintenance of multiple NLP scorers that operate in real-time, providing valuable insights for live interventions, reporting, and predictive modelling. Her work includes sentiment analysis customized to insurance and healthcare contexts, topic extraction systems, email spam filtering, and more.

Her contributions have extended to predictive modelling for lapse propensity and fraud analysis. Through her leadership and technical expertise, Jessica has not only advanced the understanding of NLP applications but also elevated the operations analytics landscape.

Jessica has consistently demonstrated her commitment to sharing her knowledge and passion for Operations Research and NLP with others. Her role as a mentor and her willingness to guide both experienced colleagues and newcomers underscores her dedication to nurturing the growth of the data science community. She has

been actively serving on the Executive Committee of ORSSA and has been appointed as Head of the Events Office since 2021.

In recognition of her achievements, impact, leadership, and dedication to the field of Operations Research, Jessica Rees is, on this 12th day of September 2023, duly awarded a Category IV ORSSA Recognition Award.