# You are invited to a virtual seminar hosted by ICCSSA
## 27 October 2022 15:30 – 16:30

## GUEST SPEAKERS:
Speaker 1: Mr Nico Katzke (Satrix)
Title: Perspectives on Optimal Hierarchical Portfolio Selection.



Using hierarchical graphs to enhance the forward-looking performance characteristics of financial port-folios has been a much discussed topic in applied financial machine learning since the proposal of the Hierarchical Risk Parity (HRP) algorithm for portfolio construction in Lopez de Prado (2016). In the existing literature, hierarchical graphs are leveraged both as tools to decrease estimation error in high-dimensional optimization problems, as well as in achieving better portfolio diversification across risk clusters. Focusing on the latter of these two objectives, we explore a novel Convex Hierarchical (CHI) portfolio optimization framework that constructs the optimal (most diversified) allocation graph for many classes of traditional financial portfolios.

As head of Portfolio Solutions at Satrix, Nico is involved in building out the research capacity of our factor portfolio and analytics offering, with research aimed at providing insight into how best to utilize factor signal information in a local context. He also works with the Investment Team in providing rebalancing and portfolio construction assistance. Nico has experience working on both the buy- and the sell-side, and before joining Satrix, worked at Prescient Securities, the BER, Fairtree and ASISA, while providing statistical consulting to the South African Reserve Bank and other institutions. Nico earned a dual Master's Degree (cum laude) from Stellenbosch University and Tuebingen University, Germany, after completing a BCom Honours degree in Mathematical Statistics and Economics. He is currently reading towards a Phd in Quantitative Finance at UCT and is also a chartered statistician and director of ICCSSA.
Nico has published a number of academic papers and has lectured Master's level courses in data science, quantitative finance and finance, part-time at the University of Stellenbosch, while also presenting research at international and local conferences. He was awarded first place for risk management in the 2020 Financial Mail rankings and achieved second place in the quantitative analyst category.

Speaker 2: Nada Abdelatif (MRC)
Title: Complexity in Biostatistics



Biostatistics uses statistical applications in multiple intertwined fields such as health, epidemiology and biology and provide powerful tools in all stages of the research life cycle, from the design of studies to the analysis of data. Complexity is a feature of modern biostatistics due to the longitudinal, incomplete, latent, or high-dimensional nature of medical and health care data. This in turn, requires statistical analysis that considers this inherent complexity. Examples of complexity in data and statistical analysis in biostatistics will be provided.

Nada Abdelatif currently works as a Senior Statistician at the Biostatistics Research Unit in the South African Medical Research Council. She has worked on various projects such as randomized cluster trials assessing interventions against intimate partner violence, estimation of attributable burden from various risk factors using comparative risk assessment frameworks to determine morbidity and mortality of diseases such as ischaemic heart disease and stroke, haemorrhagic heart disease and stroke and chronic kidney disease, and determining the impacts of ill-respiratory health due to air pollution. Since 2020, she has been part of the COVID-19 national modelling consortium as well as the COVID-19 SEIR spatial modelling group, where spatial compartmental models are used to model the dynamics of COVID-19 in South Africa at ward and district levels.



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Speaker 3: Prof. Bruce Basset (UCT)
Title: Statistical Challenges for the SKA

In this presentation, Bruce will highlight some of the enormous statistical challenges facing the SKA which will be one of the world's largest scientific experiments, and contrast them with the challenges faced by typical industry-type statistical and machine learning problems.

Bruce Bassett is a Professor of Applied Mathematics at UCT, research astronomer at SAAO and Head of Cosmology and Machine Learning at the African Institute for Mathematical Sciences. His research interests include cosmology, Bayesian statistics, machine learning and neural machine translation.  Bruce did his PhD at SISSA in Italy, followed by a postdoctoral fellowship at Oxford University. After being a senior lecturer and Reader at the University of Portsmouth and following an extended sabbatical at the University of Kyoto, Bruce returned to Cape Town in 2004. He was vice-president of the International Astrostatistics Association from 2011-2017 and head of Data Science at the South African Radio Astronomical Observatory from 2017-2020. In 2018 Bruce founded the Data Science Intensive (DSI) program which provides African graduates with hands-on training in cutting-edge data science and artificial intelligence techniques for real world applications. He is the author of the popular science book "Introducing Relativity".


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