

EDUCATION

- PhD Applied Mathematics**, Disordered Systems group at King's College London Oct 2021 - present
- Area of research: theory of deep learning and statistical inference in high dimensions using tools of statistical physics such as the replica method, random matrix theory, machine learning simulations in Python, C++
 - Academic representative of the Disordered Systems PhDs; PGR representative for Equality, Diversity and Inclusion
 - Founder and lead of the Piscopia Society KCL Committee
 - Supervisors: Dr Gabriele Sicuro and Dr Pierpaolo Vivo
- MSc Applied Mathematics**, Imperial College London, Distinction Oct 2020 - Oct 2021
- Thesis on agent-based modelling of opinion formation via differential equations, Python simulations
 - Marjorie McDermott Scholarship by the Imperial Maths Department, academic representative of the MSc Applied Maths cohort
- BA (Hons) Maths and Philosophy** with a year abroad, King's College London, First Class honours Sept 2016 - Jul 2020
- Thesis on noise filtering of financial correlation matrices and non-stationarity in financial time series via the Wishart ensemble
 - Modules: Financial Mathematics I & II, Numerical Methods, Advanced Logic, International Politics of Energy
- 3rd year of BA abroad**, University of California, Los Angeles, Sept 2018 - Jun 2019
- Modules: Honours Maths, Cognitive Science, Psychology, Computer Science (C++), Philosophy of Language, Mandarin
 - Activities: Directed Reading Program in Algebraic Topology, Undergraduate Mathematics Students Association
- International Baccalaureate (IB)** Diploma at Vilnius Lyceum, Lithuania, score 40/45 Sept 2014 - Jun 2016

PEER-REVIEWED PUBLICATIONS

- UA, A. Tonshniwal, G. Sicuro, L. Zdeborová, *Planted Matching Problems on Random Hypergraphs*, Phys. Rev. E 106, 054302. Nov 2022

UNDER REVIEW

- Mahalakshmi Sabanayagam*, Freya Behrens*, UA*, Anna Dawid, *Dissecting the Decision Boundary via the Hessian: A Perspective on Generalization*

PROFESSIONAL EXPERIENCE

- Graduate Teaching Assistant at King's College London, MSc and BSc level** Oct 2021 - present
- Teaching Numerical and Computational Methods with Python, Econophysics, Probability and Statistics, Calculus
- Quantitative Researcher at Syntropy** (optimisation of internet data routing protocols) Sept 2020 - Dec 2020
- Designed and analysed quantitative models, performed sensitivity analysis, data visualisation
 - Refactored Excel velocity and volatility models to Python using pandas, numpy, plotly, scipy
- Software Engineer at Danske Bank in Vilnius, Lithuania** Jun 2020 - Sept 2020
- Worked with large datasets, databases and stream-processing software for real-time and historical market data feed handling in-house, close collaboration with the Copenhagen HQ quant team, using Java, SQL, HTML (student program)
- Junior Researcher in Mathematical Physics at King's College London** Summer 2018, 2019
- Reviewed literature on random matrix theory applications in finance, neuroscience
 - Analysed statistics of sparse correlation random matrices using statistical physics tools, simulations in MATLAB and Python
 - Awards: King's Undergraduate Research Award (2019), EPSRC Summer Vacation Bursary (2018)
- Fundraiser at Amnesty International UK** Summer 2017
- Delivered fast pitches to inform and encourage people to set up a monthly donation in the streets of London

CONFERENCES AND SUMMER SCHOOLS

- G-Research Spring into Quant Finance April 2023
- Summer School on Statistical Physics and Machine Learning, École Physique des Houches July 2022
- Statistical Physics of Deep Learning Summer School, Lake Como School of Advanced Studies June 2022
- Random Matrices, Random Graphs and Statistical Physics for Machine Learning and Inference, ICTP May 2022

ADDITIONAL SKILLS

- | | |
|-----------------------|---|
| Languages v1.0 | English, French, Lithuanian - fluent • Italian, Spanish - intermediate |
| Languages v2.0 | Python • C++ • SQL • HTML • TeX |
| IT | Github • Jira • HPC • slurm • shell • MS Office • OS X • MS Windows |
| Interests | AI • Neuroscience • International Affairs • Long Distance Running • Nutrition |