JONATHAN RUBIN

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Nationalities: Australian, Israeli, Romanian

Relevant Skills: Python/R, Data Science and Machine Learning

EDUCATION

2019 - 2023 **MSci in Mathematics, Imperial College London – Year 3 (First-Class Honours in Year 1 and Year 2)**

Relevant Modules:

- Introduction to Machine Learning
- Principles of Programming
- Network Science
- Computational Linear Algebra
- Time Series Analysis
- Statistical Modelling 1&2

2017 - 2019 **A - Levels in Mathematics, Further Mathematics, Physics and Chemistry**
(A*A*A*A)

RESEARCH EXPERIENCE

2021 **Funded Group UROP (Undergraduate Research Opportunities Programme): "Exploring the Interplay Between Phase Separation and Collective Motion in Active Matter"**

- Selected by department for funding for 10-week research project, supervised by Dr Thibault Bertrand
- Developed skills in efficient Python programming for simulations, Numerical Analysis techniques, and team working skills
- Completed a literature review on the field of Active Matter
- Wrote code to simulate large scale systems of interacting active particles, analysing motility induced phase separation and nematic/polar order phase transitions
- Collaborated with a research group of PhD and MSc students, weekly meetings with supervisor and team
- Concluded with a final presentation of our findings to entire research group

PROJECTS

2021 **End of Year Group Project – Year 2: "An Introduction to Time Series with IBM Data Analysis" – Grade: 84%**

- Studied different models of time series (AR, MA and ARIMA) and methods of forecasting, analysed large dataset of IBM stock data using R programming language

2020 **End of Year Project – Year 1: "Dynamics of SIRS Based Disease Models" – Grade: 80%**

- Review of the theory behind limit cycles with application SIRS infectious disease model analysis

2020 **Personal Programming Project - NLP Machine Learning Program**

- Developed a Natural Language Processing program, that builds a network representation of the language, analysed this network using Community Identification (by Modularity Maximisation) to generate a dataset of word clusters

COMPETITIONS

- National Cypher Challenge (2018)- 7th place (out of 400)
- Imperial College Integration Bee (2021) – 3rd Place

SOCIETIES

- Imperial College Israeli Society - Treasurer
- Imperial College Data Science Society – Member