

Matthew Knowles

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EDUCATION

University of York

York, UK

MMath Mathematics, Grade: First (Expected)

October. 2018 – June 2022

- Focus on Pure Mathematics in years 1-3, Specialised in Mathematical Finance in year 4
- Third year project: On Differential Equations in in-host Viral Pathology

Droitwich Spa High School

Worcester, UK

A-Levels in Maths, Further Maths and Physics, Grades: ABB respectively

September. 2014 – June 2018

EXPERIENCE

Undergraduate Research Intern (Mathematical Finance)

Incoming July 2021

Department of Mathematics, University of York

York, UK

Analyst

November 2020 – January 2021

The Griff Investment Fund

York, UK

- Largest student lead investment fund in the UK
- Pitched stocks to the fund, as well as fundamental analysis of held assets

Undergraduate Research Intern (Bioinformatics)

July 2020 – September 2020

Department of Biology, University of York

York, UK

- Developed a pipeline in Python for using the Burrows-Wheeler-Aligner and SAMTools to collect, sequence, align and call the peaks of ChIP-Seq data
- Further developed an R pipeline to apply machine learning libraries to the acquired data
- Identified transcription factors for further study into breast cancer treatment

Mathematics Student Ambassador

November 2018 – March 2020

Department of Mathematics, University of York

York, UK

- Showing prospective students and parents around the university
- Answering questions about life and studying at university

Store Assistant

October 2017 – December 2018

WHSmith

Worcester, UK

- Helping customers around the store to find the things they need
- Store maintenance, cleaning

Reaserch Intern (Particle Physics)

July 2017 – August 2017

School of Physics and Astronomy, University of Birmingham

Birmingham, UK

- Using Python to visualise HiSPARC Cosmic ray data
- Applying statistical methods to the data to locate stars which are potential sources of cosmic radiation
- Presented results at the 6th annual HiSPARC conference at the University of Bath

PROJECTS

Stock Price Prediction using Neural Networks | *Numpy, Yahoo Finance API, SciKitLearn*

September 2020

- Implemented a simple program to fetch stock price data using Yahoo Finance
- Time-series of price on close plotted using Matplotlib
- Used a recurrant nerual network to predict future stock prices

Pandemic Modeller using S.I.R equations | *Python, Matplotlib, Numerical Integration*

March 2020

- Implemented a python program to solve SIR equations using Numpy and Scipy
- Plotted results on a graph using Matplotlib
- Worked collabritavely with someone to develop a UI for the program

SKILLS

Programming Languages: Python, C++, R, Java, SQL, HTML/CSS

Developer Tools: Git, Vim, VS Code, Rstudio Server, Rstudio Desktop

Communicative Languages: Fluency: English, Norwegian **Intermediate:** Russian, German, Dutch **Beginner:** Mandarin