Alexander **Koziell-Pipe**

MPHYS · MATHEMATICS · COMPUTER SCIENCE

45 Grove Park Road, London, W4 3RU

+44(0)7713 572978 | alexkoziell@gmail.com | alex-koziell.github.io/AlexKoziell/ | alex-koziell | alex-koziell

Education

University of Oxford	*Oxford, United Kingdom*
MPHYS MASTER OF PHYSICS	*Sep. 2015 - Jun. 2019*

- **1st Class Honours**
  Thesis title: Interactions of Chiral Magnetic Skyrmions

St Paul's School	*London, United Kingdom*
A LEVELS & GCSE	*Sep. 2009 - Jun. 2014*

- **A2 Level** Mathematics: A*, Physics: A*, Further Mathematics: A*, Chemistry: A*
- **AS Level** (as above): As, in addition to Biology: A
- **GCSE** 9 A*s and 3 As including A*s in Maths, Triple Science and Electronics

Grants, Awards & Achievements

ACADEMIC

2018-19	**Lord Crewe Scholarship (£700)**, awarded to 11 (out of 304) students each year to mark outstanding work by undergraduates.	*University of Oxford*
2017	**Sidgwick Exhibition 2017-18 (£150)**, awarded for exceptional academic achievement and promise.	*University of Oxford*
2014	**Senior Mathematics Prize**, chosen for outstanding work from approximately 20 students.	*St Paul's School*
2013-14	**Senior Academic Scholarship**, for top results in AS-level and excellent work throughout the year.	*St Paul's School*

SPORTING

2019	**Full Blue (Artistic Gymnastics)**, Oxford University's highest sporting achievement.	*University of Oxford*
2018	**Full Blue**, as above.	*University of Oxford*
2017	**Half Blue**, Oxford University's second highest sporting achievement.	*University of Oxford*
2016	**Half Blue**, as above.	*University of Oxford*

Professional Experience

HELIX RE, Inc.	*London, UK*
COMPUTER VISION RESEARCH INTERN	*Jul. 2019 - Oct. 2019*

- Research and software engineering role using computational geometry and machine learning (including deep learning) to create 'digital twins' of buildings.
- Contributed production-level code now used in the company's main data processing pipeline.
- Relevant skills: Python, C++, Matplotlib, Computational Geometry and Mathematical Computing.

Online Education Partnership Limited	*Remote/Worldwide*
ONLINE MATHEMATICS AND SCIENCE TUTOR	*Jun. 2016 - present*

- Teaching Maths and Science to students around the world (Hong Kong, US, Dubai) via an online interface, requiring innovative use of video and online whiteboard software to effectively communicate ideas to students.
- Subjects: Mathematics, Further Mathematics Physics, Chemistry and Biology, up to and including A Level.

National Tsing Hua University	*Hsinchu, Taiwan*
CONDENSED MATTER PHYSICS INTERN	*Mar. 2015 - Apr. 2015*

- Shadowing Professors conducting research on Weyl Semimetals: solid state crystals in a topologically non-trivial phase of matter.

University of Texas at Dallas	*Dallas, Texas, USA*
ATMOSPHERIC PHYSICS INTERN	*Feb. 2015 - Mar. 2015*

- Research using computer simulations of cloud formation, in Fortran.
- Role focused on varying physical parameters and observing the effects.

Source Lifestyle Inc	*London, UK*
COMPETITOR ANALYST	*Jan. 2015 - Feb. 2015*

- Research of 100+ potential competitors for a former startup company.

Administrative Roles

Men's Captain
Oxford University Gymnastics Club

Oxford, UK
Apr. 2018 - Mar. 2019

- Elected by teammates and other members of the club.
- Responsibilities: attending meetings, organising and leading a team, and supporting and teaching other club members.

IT Officer
Oxford University Gymnastics Club

Oxford, UK
Apr. 2017 - Mar. 2018

- esponsible for website maintenance, video production, and social media account management.
- Relevant Skills: HTML, CSS, Image and Video Editing (GIMP, DaVinci Resolve), Social Media Management.

Online Courses

Coursera	**Machine Learning**, Linear and Polynomial Regression, PCA, SVMs, Neural Networks, MATLAB and Octave.	*Stanford University, Andrew Ng*
Coursera	**TensorFlow in Practice Specialization**, Dense Neural Networks, CNNs, RNNs, LSTMs and Time Series Analysis with TensorFlow.	*deeplearning.ai*
Coursera	**Algorithms Part I,** Algorithmic design and analysis, A* Search, k-d Trees, Java.	*Princeton University*
Udemy	**Complete Web Development Bootcamp**, HTML, CSS, javascript, Nodejs, React, Databases (SQL, mongoDB), Authentication and Security.	*LondonAppBrewery*
Udemy	**iOS 12 & Swift - The Complete iOS App Development Bootcamp**, Swift, Databases (Core Data, Realm), CoreML, ARKit, SwiftUI.	*LondonAppBrewery*
Udemy	**Deep Learning A-Z**, Theory behind different deep learning models, Tensorflow, Keras and Pandas.	*SuperDataScience Team*
Udemy	**Blockchain A-Z**, Theory behind blockchain technology, coding a simple cryptocurrency in Python, the Solidity programming language.	*SuperDataScience Team*
Udemy	**How to Program Games: Tile Classics in JS for HTML5 Canvas,** Creating browser-based games from scratch using javascript and HTML.	*ChrisDeLeon*
Kaggle	**Kaggle Courses,** Basics of the Seaborn plotting library, Pandas, and Machine Learning.	*Various*

Additional Skills & Interests

Technical
ADDITIONAL EXPERIENCE FROM PHYSICS DEGREE AND SELF-EDUCATION

- Scientific Computing (Physics Degree).
- Mathematical Modelling and Statistics (Physics Degree).
- C++, R, and CUDA. Currently learning Java.
- Linux.
- Git and Version Control. Owner of a GitHub Student Account.

Languages
AS A HOBBY OUT OF AN INTEREST IN LINGUISTICS AND ANTHROPOLOGY

- Conversational French.
- Basic Japanese (including reading and writing).
- Beginner Mandarin Chinese (1 month).

Sport
PREVIOUS CAPTAIN OF UNIVERSITY GYMNASTICS TEAM, WITH AN INTEREST IN A WIDE RANGE OF SPORTS AND PHYSICAL ACTIVITY.

- Men's Artistic Gymnastics.
- Instructor level skier and snowboarder.
- Horsemanship, tennis, squash, windsurfing, martial arts.

Music

- TRUMPET: GRADE 4
- PIANO: GRADE 2