

# Robert King

US & UK Citizenship | References available upon request

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## EDUCATION

### IMPERIAL COLLEGE LONDON | MSci IN PHYSICS

First Class Honours | June 2020 | London, UK

- 1st Year: 80.3% - Dean's List • 2nd Year: 79.2% - Dean's List • 3rd Year: 79.4% • 4th Year: 78.55%
- Dean's List indicates that I came in the top 10% of my cohort of 240 students.
- In my final year of my degree I conducted my Master's project into the effect of aerosols on the eyewall of intense tropical cyclones.
- During the project I gained a understanding of remote sensing techniques and utilized Level 1B data from the NPP Suomi satellite.
- Key findings on the project included discovering an apparent bimodal distribution of glaciation temperatures inside of the eyewall as well as observation that estimated cloud droplet size is consistently smaller inside the eyewall compared to the cyclone periphery.
- Courses during my degree which I particularly excelled on include:
  - Mathematical Biology (4th Year): 91.97%
  - Atmospheric Physics (4th Year): 86.00%
  - Mathematical Methods (2nd Year): 91.00%
  - Advanced Classical Physics(3rd Year): 93.00%

### GUILDFORD COUNTY SCHOOL | A-LEVELS & GCSES

June 2016 | Guildford, UK

A-Levels: A\* Mathematics, A\* Further Mathematics, A\* Physics

## EXPERIENCE

### UNIVERSITY OF BRITISH COLUMBIA | INTERNATIONAL RESEARCH OPPORTUNITY

Summer 2019 | Vancouver, BC |  [IsingMonteCarlo](#)

- Developed a Markov Chain Monte Carlo based simulation of the 2D Ising Model to probe the behaviour around the critical temperature using C++. OpenMP was used to help parallelize the simulation to allow for maximal performance.
- Used samples from this simulations to train both fully connected and convolutional neural networks.
- The use of residual connections was also investigated to see if there was a potential performance improvement.
- Also used other machine learning techniques such as Support Vector Machines to help better probe the behaviour of the system near its critical point.

### IMPERIAL VISUALISATIONS | STUDENT WEB DEVELOPER & TEAM LEADER

2017 - 2020 | London, UK |  [Imperial-visualizations](#)

- Each summer since 2017 I have participated in this Undergraduate Research Opportunity (UROP) provided by Imperial College.
- The aim of this project is to develop a suite of educational visualisations to explain complex topics at a level for undergraduate students and senior high school students.
- As a part of this project I personally developed a Django based backend to host the visualisations created by myself and other student programmers.
- During this project I have acted as a leader and a mentor to my fellow students, teaching incoming students the basics of web development. I have also been able to collaborate with academic staff members from across the college in genuine partnerships.
- Our site is currently being used in teaching across departments at Imperial College including Physics, Biomedical Engineering & Aeronautical Engineering.
- This summer I am helping to lead a team of 6 other students to develop a Vue.js component library of common elements for visualizations to allow incoming students during term time to rapidly create powerful visualizations.
- Furthermore I have helped to create a series of learning materials including videos, for basic Vue.js and JavaScript concepts to help new students understand the basic concepts of web development.

# PROGRAMMING

## Proficient with:

Python • JavaScript • C++ • C# • HTML • CSS

## Tools & Frameworks:

Django • SQL • Git • Numpy & Scipy • Docker • Keras • Vue.js • D3.js

## Familiar with:

Ruby • Java • NodeJS • Arduino • Android

# ADDITIONAL SKILLS

## Office Software

Microsoft Office •  $\LaTeX$

# ACTIVITIES

## **AI HACK | IMPERIAL COLLEGE LONDON**

November 2018 |  AIHack

- Took part in a 24 hour hackathon focused on using Machine Learning to find solutions to various problems.
- Worked in a team of 5 to create a program to draw optimal long distance train routes through the state of California using data from the 2010 US Census, demonstrating my teamworking ability.
- Our program utilized unsupervised machine learning techniques, notably K-means clustering to group similar demographics and match areas containing large number of jobs with available skilled workers.
- We were one of the 4 winning teams as judged by a panel of experts from the data science industry.
- We were invited to present our project further at the 2018 Google Developer Group DevFest in London where we received great feedback from various developers and entrepreneurs.

## **ICHACK 19 | IMPERIAL COLLEGE LONDON**

January 2019

- Participated in one of the largest university hackathons in the UK with a team of 3 others.
- Over the course of 24 hours we developed a simple web app using Flask and Python with the aim of helping users to be more aware of the environmental impact of the food usage.
- The hackathon was a test of my ability to work under pressure as well as moving from an idea to development and deployment.

## **ICSS | IMPERIAL COLLEGE SPACE SOCIETY**

President 2019-2020 | Secretary 2018-2019 | Events Officer 2017-2018

ICSS gives Imperial College students the chance to take part in a variety of space related projects including building rockets from scratch, launching high altitude balloons and even working on designing a Cube Satellite.

- Last academic year I was the president of the society. This meant I was the sole individual responsible for the overall well-being of the society. In this role I was also responsible for all external relations between ICSS and other UK space societies as well as national bodies such as the UKSEDS and the Royal Aeronautical Society.
- Last year I was the Secretary responsible for communication with our approximately 100 members who are students across various departments at Imperial College.
- Previous I was the Events Officer where I organized the first international tour for our society to the German Aerospace Centre in Cologne
- I also coordinated a series of guest lectures featuring various industry speakers such as from Airbus, LenaSPACE and Virgin Galactic.
- During my time in ICSEDS I have been able to work with high altitude balloon project to perform a successful launch that went up to 21km of altitude.