



I Kit Cheng (Matthew)

Email: matthewkit@gmail.com

Profile

Passionate for science, technology, engineering and mathematics with strong technical and interpersonal skills gained from effective teamwork and working under pressure to complete challenging projects.

Skills

Software

Python, Matlab, Fortran, Linux shell, Perl, Solidworks, Autodesk, LaTeX, MS office, Camtasia, Adobe Premiere Pro

Language

Cantonese (native)
Mandarin (fluent)
English (fluent)
Spanish (Intermediate)

Driving

Full car and motorcycle licenses

Achievements and Interests

- Published research paper on predicting 'Electron heating in Saturn's magnetopause' using coding to Journal of Geophysical Research in March 2021
- Awarded Macau Foundation Special Scholarship for Physics
- Built 2.5m wind tunnel to demonstrate aerodynamics
- Maintain active YouTube channel on tech, programming and machine learning
- Swimming, video making and reading

EDUCATION

PhD – Centre for Doctoral Training in Data-Intensive Science

University College London 2019 - present

Project: Autodetect Saturn's bow shock and magnetopause to enable statistical characterization of its magnetic environment

Major: Machine learning with Big Data, Research software engineering, Statistical data analysis

Master in Science (MSci) in Physics

1st Class honours

Imperial College London 2015-2019

Project: Magnetic Reconnection in the Solar Wind using MMS.

Major: Computational Physics, Information Theory, Complexity and Network

Diploma in Engineering

Distinction

Boston College (UK) 2014-2015

Coursework: Computer-aided design of flood barrier, 3D printing, tools making

RESEARCH EXPERIENCE

Analysis of Twitter Data for Covid-19 in the UK

UCL-ONS collaboration Dec 2019 – Jul 2020

Developed machine learning framework and leveraged BERT NLP model for Twitter user classification based on profile description. Evaluated prevalence of mask wearing in public.

International Research Opportunities Programme Jul – Aug 2018

Seoul National University

Students selected were based on academic excellence and research experience. Investigated effects of ions on liquid water using molecular dynamic simulations. Wrote data analysis code in Python, Fortran and Perl. Made animations using VMD and FFmpeg.

Gravity-Related Research Summer School Jun 2018

European Space Agency (ESTEC)

Worked in an interdisciplinary team to propose a gravity-related research project on non-Newtonian fluids in micro-gravity.

Undergraduate Research Opportunities Programme Jul 2017

Imperial College London, Space and Atmospheric Physics

Simulated and animated particle dynamics in Earth's radiation belts using Fortran and Python code. Implemented a new mathematical model to calculate the electron motion more effectively. Used Linux shell to access Imperial's high-performance computing cluster.

WORK EXPERIENCE

Teaching Assistant

Oct 2020 – present

University College London

Teaching and coursework marker for graduate/undergraduate courses including: 'Research Software Engineering with Python', 'Electromagnetic Theory'. 'Physics of Stars'.

Physics tutorial assistant and Events Coordinator

2016 - 2019

Imperial College London

Led support sessions for physics undergraduate students. Organized music concerts, updated website using WordPress, publicity on Facebook page.

Private Tutor, Piano Teacher and Interpreter

2015 - present

Tutoring subjects: Python (incl. game development and NLP applications), Maths, Physics, Chemistry, computer troubleshooting, ABRSM Piano and music theory exams. English-Chinese Interpreting for social workers.