

# SHIKANG NI

Wolfson College, Cambridge, CB3 9BB

[LinkedIn](#) • [GitHub](#)

## Education

### University of Cambridge, Wolfson College, United Kingdom

BA (Hons), Natural Sciences

Oct 2021 - Jun 2024

- 1<sup>st</sup> year subjects: Mathematics, Physics, Material Science, Earth Sciences (1<sup>st</sup> class).
- 2<sup>nd</sup> year subjects: Physics A, Physics B, Mathematics (1<sup>st</sup> class).

### York Plasma Institute, University of York

Advanced Microwaves in Beams & Plasma Summer School

Jul 2022

- Alongside a class of graduate students, learnt about advanced concepts in beam tracing, microwave diagnostics for Tokamaks, plasma turbulence, and heating and current drive.

## Work Experience

### QuantEdge Capital, Singapore

Quantitative Research and Trading Intern

Jun 2023 – Aug 2023

- Worked on independent projects and fast-paced group projects including signal research, designing and implementing trading algorithms as well as portfolio management.
- Well-trained in quantitative research process such as literature review, data analysis and backtesting.

### Culham Centre for Fusion Energy, Oxfordshire

Student Researcher

Jun 2022 – Sep 2022

- Integrated new beam tracing model, Scotty, with existing OMFIT framework, which makes the technique available to analyse the data from nuclear fusion experiments. The new OMFIT module was successfully tested on MAST-U and DIII-D, a world-class tokamak in the US.
- Within a short time, developed a broad understanding of fusion workflows as well as to work with the OMFIT developers at General Atomics, USA.
- Learnt how to handle different data types and honed my data analysis skills and demonstrated ability to understand novel systems quickly.
- Contribution was recognised and hence listed as one of the co-authors in the paper published in Review of Scientific Instruments: <https://aip.scitation.org/doi/10.1063/5.0101805>.
- Supervised by Peng Shi & Valerian Hall Chen.

## Mirror Education

Part-time Tutor

Oct 2021 - Present

- Conducted a total of 33 mock interviews and 11 personal statement classes for students aspiring to apply to Oxbridge.
- Provided timely feedback to the student.
- Well-received by the students and obtained one new student by referral with numerous students signing up for multiple classes.

### London Strategic Consulting, London

Research Analyst

Feb 2022

- Conducted in-depth research on the topic of education economics, with a focus on the education technology sector.
- Produced a 3000-word research report and delivered a 15-minute PowerPoint presentation at the end.

**A\*STAR Institute for Infocomm Research, Department of Aural & Language Intelligence, Singapore** Jan 2021 – Sep 2021  
Student Researcher

- Obtained more than 50 hours of speech data from Childespy API call to evaluate the performance of a pre-trained language model.
- Developed the front-end of a language learning demo app using Python Kivy.
- Found a novel approach to build a corpus of 55,000 pairs of parallel Singlish-English sentences and summarised the findings in a paper: <https://aclanthology.org/2022.coling-1.345/>.
- Supervised by Dr. Nancy F. Chen.

**Xianchao Logistics, Singapore** Nov 2020 – Jan 2021  
Data analyst

- Developed a pricing calculator using Python to calculate and compare shipping prices across different Excel files, subjected to variables such as parcel size, destination, and item type. This helped optimise shipping cost and achieved cost savings for the start-up.
- Conducted competitor research by evaluating the strengths and weaknesses of competitors.

**Land Transport Authority, Systems Engineering Division, Singapore** Dec 2018  
Project Intern

- Visualised huge amount of repair log data using VBA in Excel.

## Leadership Experience

**Cambridge University Physics Society, United Kingdom**  
Co-chair

- Oversees the entire working of the society. Mar 2023 - Present

Secretary Mar 2022 – Mar 2023

- Collaborated with committee members of other science societies to organise a pub quiz and punting event, with turnout of over 100 people for each event.
- Crafts and disseminates engaging newsletters to subscribers of the society's mailing list.

**Cambridge University Astronomical Society, United Kingdom**

Treasurer & Membership Officer Mar 2022 – Mar 2023

- Oversees financial matters of the society such as budgeting and maintaining the balance sheet.
- Ensures transparency of society's financials by recording and tracking all money inflow and outflow.

**United Kingdom Singapore Students' Council, United Kingdom** Sep 2021 – Nov 2022  
Technology Director & Regional Director

- Proposed and designed a telegram bot, to increase engagement with the society's 500 subscribers on Telegram. The bot is developed using Python, Heroku and GitHub.

## Achievements

**CUATS Coding Challenge – Finalists** Feb 2023  
Awarded by Cambridge University Algorithmic Trading Society. Project on pairs trading strategy was selected as finalist to give a 10-minute presentation on it.

**International Physicist Tournament** Dec 2022  
First place in national selection for the UK team, hence chosen to represent the UK in the International Physicist Tournament in April 2023

**Jennings Prize** Jul 2022  
Awarded by Wolfson College Cambridge for academic excellence.

**Land Transport Authority (LTA) Book Prize** Jul 2018  
Awarded to students with outstanding academic and extra-curricular performance in school.

**Singapore Astronomy Olympiad** Jun 2018  
Achieved bronze medal.

## Programming Experience

### Physics and Mathematics Coursework

- Scientific computing using Python in part IA. Topics covered: numerical analysis, statistical analysis, data presentation, good practice in coding.
- Computing in part IB Math. Topic covered: Advance Excel techniques.

### Cambridge University Algorithmic Trading Society

Member

- Participated in weekly coding sessions where I learned how to apply basic quantitative trading techniques on QuantConnect.

### Personal projects

SRStimer ([Github Link](#))

- Created a time tracking Desktop App, written in Python using KivyMD for frontend and Google Sheets API for backend data storage.

## Publications

### Nuclear Fusion: Harnessing the Power of Stars ([link](#))

BlueSci Issue 55 (Oct 2022)

- Authored a 1200-words article about the current developments in nuclear fusion research.

### Validating and optimising mismatch tolerance of Doppler backscattering measurements with the beam model ([Link](#))

Proceedings of the 24th Topical Conference on High-Temperature Plasma Diagnostics in Review of Scientific Instruments. (Sep 2022)

(*Valerian Hall-Chen et al, Shikang Ni*)

### Singlish Message Paraphrasing: A Joint Task of Creole Translation and Text Normalization ([Link](#))

COLING 2022

(*Zhengyuan Liu, Shikang Ni, Ai Ti Aw and Nancy Chen*)

### WittyKiddy: Multilingual Spoken Language Learning for Kids ([link](#))

Interspeech 2021

(*Ke Shi, Kye Min Tan, Huayun Zhang, Siti Umairah Md Salleh, Shikang Ni, Nancy F. Chen*)

## Volunteer Experience

### Cambridge Hands-On Science (CHaOS)

Volunteer

Jun 2022 - Present

- Demonstrated science to young children in Summer Roadshow for 1 week, which spans experiments from polarisation and air flow to cantilever bridge.

### Project Access

Oct 2021 – Present

Mentor

- Provided one-on-one mentorship to students who are applying to University of Cambridge, in the form of mock interviews and feedback on personal statement.

## Skills & Interests

**Technical:** Python, C++ (elementary), Machine Learning, Data Analysis and Visualisation, LaTeX

**Languages:** English Language (Professional Proficiency), Chinese Language (Good Proficiency)

**Interests:** Photography, Hiking, Codeforce, Chess, Table Tennis, Energy Technology