SHIKANG NI

Wolfson College, Cambridge, CB3 9BB

Education

University of Cambridge, Wolfson College, United Kingdom

BA (Hons), Natural Sciences   Oct 2021 - Jun 2024

- 1st year subjects: Mathematics, Physics, Material Science, Earth Sciences (1st class).
- 2nd year subjects: Physics A, Physics B, Mathematics (1st 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, 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.
- 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.
- Supervised by Peng Shi & Valerian Hall Chen.

Mirror Education

Tutor

- 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

Student Researcher   Jan 2021 – Sep 2021

- 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.

Leadership Experience

Cambridge University Physics Society, United Kingdom

Co-chair   Mar 2023 - Present
- Coordinated a committee of 14 people to successfully organise various large-scale events like weekly talks and social events.
- Led the collaboration with other societies to organise various workshops and talks.
- Managed the finances of the society through prudent budgeting and generating inflow through seeking sponsorships.

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

Technology Director & Regional Director   Sep 2021 – Nov 2022
- 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

Jennings Prize   Oct 2023
Awarded by Wolfson College Cambridge for academic excellence.

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

International Physicist Tournament   Dec 2022
Selected to represent UK at the IPT after emerging victorious at the national team selection. Solved open-ended Physics problems and debated them with teams from other nations.

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.

Publications

Can Language be Abstracted? (link)
BlueSci Issue 57 (Oct 2023)
- Authored a 1200-words article about natural language processing.

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 & Hobbies

Technical: Microsoft Office, Python, Data Analysis and Visualisation, LaTeX
Languages: English Language (Professional Proficiency), Chinese Language (Good Proficiency)
Hobbies: Hiking, Photography, Table Tennis, Juggling