

Shizhe Liu

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📍 Oriel College, University of Oxford, Oriel Square, Oxford, OX1 4EW

EDUCATION

University of Oxford, Department of Computer Science Oct 2024 - Present
Computer Science and Philosophy Oxford

King Edward VI Camp Hill School for Boys Sep 2022 - Jun 2024
A-Level Further Maths (A), Maths (A*), Computer Science (A*), Physics (A*) and EPQ (A*)* Birmingham

EXPERIENCE

University of Exeter Jul 2025 - Present (University vacations)
Research Intern Exeter/Remote

- Developed SAFRG, a novel framework for facial reaction generation that conditions on the listener's intended speech
- Published a paper to AAAI 2026 and submitted a paper as first author to IEEE FG 2026

BT Applied Research Department Jun 2022 - Jul 2022
Applied Research Work Experience Adastral Park, Ipswich

- Built a mathematical model for real-time hand gesture classification on the Microsoft HoloLens

PUBLICATIONS

1. **S. Liu**, X. Kong, J. Long, J. Gu and S. Song. SAFRG: Speech Aligned Multiple Appropriate Facial Reaction Generation. *The 20th IEEE International Conference on Automatic Face and Gesture Recognition 2026 (IEEE FG 2026)*. (under review)
2. X. Kong, H. Zhu, H. Sun, Z. Guo, J. Gu, X. Ni, W. Zhang, **S. Liu**, S. Song. Learning Personalised Human Internal Cognition from External Expressive Behaviours for Real Personality Recognition. *The 40th Annual AAAI Conference on Artificial Intelligence 2026 (AAAI 2026)*. 2026
3. **S. Liu**, S. Hapuarachchi, P. Shrikaanth, W. Shi, J. Regi, Applications of the XGBoost machine learning algorithm in particle physics, Real particle physics analysis by UK secondary school students using the ATLAS Open Data: an illustration through a collection of original student research, *The European Physical Journal Plus, Springer*, Volume 139, article number 781, pp 28-33. 2024.

PROJECTS (SELECTED)

Oriel College JCR AI Assistant & Automation Tools Jul 2025 - Oct 2025
Oriel College, University of Oxford

- Built and deployed an AI Chatbot to answer freshers questions using Streamlit, OpenAI API and a RAG pipeline
- Developed a live, automated Instagram intro generator, using Google APIs, Pillow and GitHub Actions

FlareGuard: AI Blockchain Wallet Credibility Checker Feb 2025 - Feb 2025
ETH Oxford Hackathon

- Extracted Ethereum addresses and fetched financial data for each address using Flare FDC and Coston API
- Developed an anomaly detection model to identify suspicious activity using three unsupervised ML methods

Finding Rare Particle Decays using XGBoost Feb 2025 - Feb 2025
IRIS Best Research Project Award

- Trailblazed an innovative method in finding rare particle decays, such as the Higgs Boson, using XGBoost

SKILLS

Languages: Python (PCAP Certified), Scala, Haskell

Machine Learning: Diffusion models, Transformers, Generative modelling, CNNs, RAG Pipelines

Libraries: PyTorch, Scikit-Learn, Keras, Pandas, NumPy, Streamlit

AWARDS

Best Research Project Award - Institute for Research in Schools, 2023

Distinction Award - British Mathematical Olympiad, 2023

Distinction Award - Oxford University Computing Challenge, 2023