

Zhixuan Liu

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EDUCATION

Imperial College London, United Kingdom

Sep 2023 – Jun 2026

- **Bachelor of Engineering in Biomedical Engineering (expected)**
- **Key Modules:** Design & Professional Practice, Bioengineering Science, Programming, Digital Biosignal Processing, Image Processing, Fluid and Solid Mechanics, Modelling in Biology, Business Economics, Graphics
- Coursework includes mathematical modelling in thermodynamics, electronic stethoscope circuit design, EEG/ECG signal processing, and PNG image parsing and reconstruction

Nanjing Foreign Language School, China

Sep 2017 – Jun 2023

- **A Level & IGCSE:** 7 A*'s including Mathematics, Additional Mathematics, Physics, Chemistry, Economics

SKILLS

- **Programming & Data:** Python, C++, Java, MATLAB, Microcontroller Programming, Computational Modelling
- **Engineering & Prototyping:** System Architecture, SolidWorks, Altium, PCB Design, AutoCAD, 3D Printing
- **Research Skills:** Neural Network Analysis, Image Processing, Digital Signal Processing, Circuit Design & Testing
- **Design & Interaction:** Figma, Canva, LaTeX, Blender, Adobe Premiere Pro (PR), User Research, UI/UX Design

RESEARCH EXPERIENCE

Fudan University, Institute for Brain-Inspired Intelligence (ISTBI), Researcher

Jun – Jul 2025

- Researched Functional Brain Connectivity in Autism Spectrum Disorder (ASD) using resting-state fMRI data from children with ASD and controls ($n = 30$)
- Developed a reproducible Python-based rs-fMRI pipeline integrating motion correction, Schaefer-100 parcellation, and graph-theoretical metrics including clustering coefficient and functional gradient
- Implemented and validated statistical analyses (two-sample t-tests with FDR correction) to identify connectivity and gradient alterations correlated with behavioral assessments (ADOS, CARS, SRS)
- Visualized brain-wide t-maps and gradient-behavior patterns, identifying strong positive correlation between clustering component scores in the supplementary motor area (SMA) and ADOS-RRB scores
- Authored a 5700-word research report and presented results to academic mentors at ISTBI

Applied Biomedical Engineering Projects

ASD Clinical Diagnostic Support System, Independent Developer

Aug 2025 – Present

- Translated from prior ASD research at Fudan and addressed the behavioral-only limitation of current ASD diagnosis
- Integrated behavioral matrix and MRI images into an interpretable risk-evaluation platform spanning screening, diagnosis, follow-up, and re-evaluation
- Translated behavioral and brain functional connectivity into visualized data and brain color maps, supporting clinical diagnostics and facilitating clear communication with families

Portable Waterproof Swim Timing System, Designer and Engineer

Sep 2024 – Jun 2025

- Established and achieved design specifications for a high-precision portable timer based on user research, market analysis, compliance constraints and risk evaluation
- Integrated foldable pressure pads, Arduino, LED, LCD display, and multi-button interface within limited budget

WORK EXPERIENCE

- Lexue Youth Weekly, Youth Editor-in-Chief

Jul 2013 – Present

 - Advanced from Junior Reporter to Youth Editor-in-Chief, overseeing editorial strategy for 30+ features that translated complex topics, including urban infrastructure, rehabilitation, and algorithmic logic, into accessible narratives
 - Expanded the publication’s impact from public discourse to concrete social engagement, initiating community campaigns that transformed investigative reporting into tangible social action and volunteer programs
- Merlin Entertainments & LEGOLAND Shanghai, Assistant to the Head of Operations

Aug – Oct 2024

 - Partnered with the Head of Operations during the pre-opening phase, bridging global engineering standards with local execution constraints to ensure operational readiness
 - Contributed to the localization of safety protocols (CoSWP and GOP), designing a visual information architecture to reduce cognitive load and ensure strict compliance
 - Engineered a logic-gated competency tracking system to automate regulatory compliance checks, closing the loop on staff qualification and operational readiness
 - Coordinated with Events teams on large-scale performances during the Shanghai Tourism Festival
- Vision Academy, A-level Physics and Mathematics Teacher

Jun – Aug 2024

 - Designed and delivered engaging lessons, tailoring content to improve student understanding and problem-solving
 - Mentored 30+ students through university applications and mock interviews for top UK engineering programs
- Sicily Culture Media, Social Media Executive

Jul – Sep 2023

 - Scripted, filmed, and operated content for a 3.4 million follower media account, producing promotional videos for products from companies including Lancôme, Mercedes-Benz, Samsung, Philips

EXTRA-CURRICULAR ACTIVITIES

- Imperial College Bioengineering Society, Vice President

Jun 2025 - Present

 - Partnering with the president and cross-functional team leads to define strategy and align wellbeing, academic, industrial, and student engagement activities for the 1,200-member society
 - Building partnerships with industry and alumni to secure sponsorships and deliver hackathons, career fairs, workshops, and networking events connecting students with real-world biomedical innovation
 - Strengthening community engagement through collaborative events with department faculty, staff, and other engineering societies, as well as new publicity initiatives across traditional and digital platforms
- Nanjing Foreign Language School Science Club, President

Sep 2021 – Aug 2023

 - led a 180-member club combining creative experimentation with scientific research, from meteor-watching and academic workshops to bioregenerative life-support modelling showcased at community fairs

CERTIFICATIONS & MEMBERSHIPS

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| • Top Gold in British Physics Olympiad | • Top 15 Nationwide in Australian Science Olympiad |
| • Member, Biomedical Engineering Society (BMES) | • Member, Design Museum |
| • Member, Institution of Engineering and Technology (IET) | • Member, Victoria and Albert Museum (V&A) |
| • Member, British Mountaineering Council (BMC) | • Member, Imperial College Outdoor Club |

SKILLS & INTERESTS

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| • Proficient in English , Native in Mandarin , Basic in Japanese | • American Sailing Association Keelboat Certification |
| • Third Place in Jiangsu Robotics Competition | • Sixth Place in Jiangsu Rubik’s Cube Tour |
| • China Red Cross First Aider | • NHS UK National Health Service volunteer |