

Zach Zhao

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Personal Profile

Research-driven candidate with strong coding skills in Python/R and solid data analysis capabilities, including data cleaning, feature engineering, statistical testing, and predictive modeling. Experienced in experiment implementation, behavioral data analysis, and computational modeling.

Education

Sep 2024 – Jun 2027: Cognitive Science

University of Edinburgh, Edinburgh

Expected to graduate with Distinction.

Interdisciplinary Courses:

Computer Science: Data Structure and Algorithms, Fundamentals of Machine Learning, NLP, Introduction to Computation, Reasoning and Agent, Compiling Technique, Speech processing, Foundations of Artificial Intelligence, Introduction to Data Science.

Cognitive Science: Psychology, Philosophy of Mind, Informatics–Cognitive Science, Logic, Data Analysis.

Sep 2021 – Jun 2022: Finance

Shanghai University of Finance and Economics, Shanghai

After one year of study, I decided to take a gap year to explore interdisciplinary fields and further clarify my academic interests, ultimately applying to and being accepted into the Cognitive Science program at University of Edinburgh.

First-Year Coursework: Introduction to Business, Principles of Management, Economics, Accounting Fundamentals, Business Mathematics, Further Mathematics.

Research & Project Experience

Sep 2025 – Present: Research Assistant

University of Edinburgh, School of Informatics

- Independently conducted a research project under the supervision of Bonan Zhao and Marta Kryven, covering online experiment design, behavioural task implementation, data analysis, and computational modeling.
- Developed online human behaviour experiments and participant-facing research interfaces to support robust and scalable behavioural data collection.
- Performed data analysis and built computational models to study human visual problem solving and evaluate model predictions against behavioural outcomes.
- Contributed to manuscript writing for a paper submitted to CogSci 2026 and am currently expanding the experiments and modeling for a follow-up submission targeting NeurIPS 2026.

Jun 2025 – Sep 2025: Visiting Student-RA

Shenzhen Medical Academy of Research and Translation (SMART), Shenzhen

Research Project: Brain–Heart Interactions During Sleep in Mice and Machine-Learning Prediction of Sinus Pause

- Independently designed and implemented a full EEG/ECG analytics pipeline: built data-cleaning, feature-extraction and visualization modules from scratch, replaced legacy code.
- Created a custom θ/δ -surge detector with sleep-state awareness: integrated REM/NREM/Wake labels, Mann-Whitney statistics, and state-specific ROC curves, boosting true-positive detection by 18%.
- Built a multimodal sinus-pause prediction model: fused >40 features (EEG spectral metrics, ECG HF-HRV, sleep state, etc.) and trained a Random-Forest + XGBoost ensemble that issues risk alerts before pause.

Dec 2024 – Jun 2025: Research Assistant

University of Sheffield, Cognitive Ability & Plasticity Lab, Sheffield

Research Project: Understanding Transfer Mechanisms in Cognitive Training Through Individualized Mod-

eling

- Analyzed multi-dimensional behavioral and cognitive data from a longitudinal processing speed training study across three time points (pre, post, follow-up).
- Applied machine learning models (Random Forest, XGBoost) to predict individual differences in transfer effects using pre-training cognitive profiles and background features.
- Estimated and interpreted key cognitive parameters (drift rate v , boundary a , non-decision time t) using diffusion modeling (HDDM).
- Identified feature importance and potential predictors of differential cognitive gains across participants and task types.
- Explored the potential for personalized cognitive intervention through data-driven individual profiling.

Jul 2024 – Nov 2024: Second Author

Exploring Generative AI Empowerment in City Brand Building from a Human-Factors Perspective: An Empirical Study Based on Wuhan City Emoji

AHFE 2025 International Conference – Accepted for Presentation & Publication

- Served as the second author on this peer-reviewed international conference paper.
- Contributed to literature review, data analysis, and manuscript writing.
- Independently prepared and delivered the full online pre-conference presentation, including slide design, script writing, and virtual delivery.
- Explored how generative AI can support human-centered city branding strategies through visual communication tools like emojis.

Internships

Feb 2023 – May 2023: HRBP Intern

REDnote, Shanghai

- **Recruitment Coordination:** Collaborated with the Beijing team to align on recruitment needs and worked with HR leaders in Wuhan to standardize candidate profiles, ensuring consistent recruitment strategies. Successfully recruited 16 interns for functional departments, 1 network expert, and 2 government affairs experts (R7 level), achieving a recruitment success rate of 90%.
- **Channel Maintenance and Data Analysis:** Maintained five recruitment channels, including Liepin and Boss Zhipin, and conducted data funnel analysis. By proactively contacting 20 active job seekers daily, improved response rates for high-potential candidates, boosting resume screening efficiency by 30%.
- **Process Optimization:** Led the optimization of the intern recruitment process, developing and implementing a Standard Operating Procedure (SOP) that shortened recruitment cycles by 20%, increasing team efficiency.
- **Public Welfare Project Recruitment:** Participated in team building for REDnote's "Xiao Hang Keng" public welfare project, successfully recruiting 12 key members, enhancing team productivity and project impact.
- **Competitor Analysis:** Created a key personnel relationship map for public welfare departments at Tencent, NetEase, Pinduoduo, and ByteDance, identifying and evaluating potential talent to support the company's talent strategy.

Sep 2022 – Dec 2023: User Research Intern

REDnote, Shanghai

- **Desktop Research:** Independently conducted research on non-traditional pets content within REDnote, collecting and organizing information on content creators' profiles, content categories, traffic trends, and user interaction data. Additionally, researched the non-traditional pet content strategies on similar platforms, including Douyin and Bilibili, and created a 20+ page analysis report to support the team's understanding of content performance differences across platforms, informing future product and content strategies.
- **User Interviews:** Led in-depth interviews with over 50 users of non-traditional pet content, covering diverse demographics such as young adults, families, and married individuals. Conducted 40+ online discussion sessions to gather feedback on the platform, improving interview record templates and enhancing data recording efficiency by 20%.
- **Data Analysis:** Designed and refined a user brand survey, compiling bi-monthly brand research data for REDnote and key competitors, including metrics such as Net Promoter Score (NPS) and brand ranking. Provided quantitative feedback and trend insights to support the brand management team in decision-

making.

Jan 2022 – Mar 2022: Product Intern

Prudential Hong Kong Online

- **Market Analysis:** Conducted in-depth research on the Hong Kong financial market, gaining knowledge of basic insurance and fund products. Wrote two market research reports that provided valuable market insights for the team.
- **Data Processing and Analysis:** Independently analyzed detailed aspects of the E Fund Quality Growth ETF, including fund expense distribution, valuation methods, and dividend mechanisms, saving the team approximately 10 hours of research time.
- **Annualized Return Calculation:** Extracted key data from insurance products, calculated annualized return (IRR), and conducted phased analyses of investment returns, proposing three recommendations to improve financial planning and quantitative analysis capabilities.
- **Project Presentation:** Applied learned knowledge in a team roadshow project by designing suitable investment portfolios and insurance plans for a specified family, strengthening cross-team communication and collaboration skills.

Extra-Curricular Activities

Sep 2024 – Mar 2025: Voluntary Math Teacher

Alba Cathay Chinese School, Edinburgh

- **Lesson Preparation:** Created weekly lesson plans integrating fun math exercises and practical examples, ensuring they matched students' skill levels and learning objectives.
- **Classroom Instruction:** Conducted engaging math sessions, encouraging interactive problem-solving and discussion to foster student participation.
- **Collaborative Communication:** Worked closely with fellow volunteer teachers and staff to align lesson content with broader educational goals.

Mar 2024 – May 2024: U21 Leadership Course

Online

- Participated in Universitas 21 Global Citizenship program, collaborating with students from 29 universities worldwide.
- Focused on inequality issues and proposed sustainable solutions, earning U21 Global Citizenship micro-credential.

Nov 2020 – Jan 2023: Sneaker Export Business Project | Partner

Hang Zhou

- Led a sneaker and apparel export business, with a total investment exceeding RMB 4 million over three years.
- Efficiently managed supply chain and client relationships, achieving a profit of RMB 700,000 in 2021.
- Successfully expanded the business to the U.S. and Malaysia in the first half of 2022, enhancing market diversity and brand impact.
- Established warehouses in multiple countries, optimizing logistics to ensure fast and safe delivery to international clients.
- Improved business efficiency and profitability through strategic adjustments and market analysis.

Jan 2021 – Mar 2024: Bali Online English Teacher

Online

- Provided online English lessons to students in Bali, designing interactive courses to enhance engagement and academic performance.
- Earned a recommendation letter from the Bali government in recognition of teaching effectiveness and respect for local culture.

Skills

Python (Experienced), **R** (Experienced), **MATLAB** (Skillful), **JavaScript** (Skillful), **HTML/CSS** (Skillful), **SQL** (Intermediate), **Machine Learning** (Experienced), **Statistical Analysis** (Experienced), **Data Cleaning & Feature Engineering** (Experienced), **Behavioral Experiment Design** (Experienced), **Computational Modeling** (Experienced), **User Research** (Experienced), **Leadership & Collaboration** (Skillful), **English** (Highly Proficient), **Chinese** (Native)