Yicheng Su

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Biochem + bioinformatics trainee pivoting to systems neuroscience; multi-omics analysis (RNA-seq/ATAC/ChIP/Tiling-C/ CRISPR KO/RNAi/Drug response)

RESEARCH EXPERIENCE

Master's student, Julian Knight Lab, Centre of Human Genetics (Oxford) **Sep 2025 - Present**

- Process and analyze single/bulk RNA-seq, ATAC-seq, Tiling-C, and ChIP-seq datasets to study Ankylosing Spondylitis (AS)
- Independently devising a Bayesian and Hidden Markov Model pipeline to integrate multimodal datasets to study AS etiology and heterogeneity in patient response

Research intern, Yang Shi Lab, Ludwig Institute of Cancer Research (Oxford) **Nov 2024 - Sep 2025**

- Independently identifies a 4 gene signature that predicts MDS transformation to post-MDS secondary AML at high accuracy (currently validating using a second dataset) using WGCNA, mediation, and elastic nets.
- Performed bioinformatics on public bulk mRNA-seq, CRISPR KO, RNAi, and drug response to identify lineage-specific vulnerabilities in acute myeloid leukemia (AML).
- Designed and ran EC50 assays to test drug synergy for targeting AML.
- Developing a pan-cancer drug synergy prediction database with a senior postdoc.

Model Department Intern, Biomap (Beijing) **Jul 2024 – Aug 2024**

Performed data analysis on comparing protein structure prediction model performances.

- Trained a Torch-ANI model to perform machine learning force field (MLFF) calculations using atomic number and spatial Cartesian coordinates as inputs.

Research intern, Hongkui Deng Lab, Peking University (Beijing) **Jul 2023 – Aug 2023**

- Induced hADSCs into hCiPSCs using the lab's small-molecule protocol published in Cell, 2023.
- Analyzed oxygen's role in reprogramming metabolism, confirming oxidative phosphorylation as the main energy source.
- Performed Western blotting, RT-PCR, and cell passaging.

Research intern, Qinghua Liu Lab, National Institute of Biological Sciences (Beijing) **Jul 2021 – Aug 2021**

- assisted study of calcineurin effects on NREM sleep in mice; reagent prep + notes.

SKILLS AND INTERESTS

Skills: Machine learning with Python, Data analysis using Python and R, Flutter, app development, Git, ATAC-seq, ChIP-seq, Tiling-C processing and analysis

EDUCATION

MBioChem Biochemistry (Molecular and Cellular), University of Oxford, Oriel College **2022 – 2026**

- Grade: 2:1 in 3rd year Finals (equivalent to a 3.7GPA)

INDEPENDENT PROJECTS

Pikkr – iOS App for Reducing Decision Fatigue (*Solo Developer*)

- Designed and launched a decision-making app on the iOS AppStore aimed at minimizing decision fatigue through probabilistic card-based selections.
- Currently implementing a multi-armed bandit algorithm to personalize decision-making based on evolving user preferences.

3D Mind Map Tool for Thought Visualization (*Independent Project*)

- Developing an interactive 3D tool to spatially represent and connect ideas in a way that mimics the associative structure of human thought.
- Long-term vision includes adapting the system for VR-based cognitive navigation and thought mapping.

EEG/ECG Emotion Prediction Benchmarking (*Computational Neuroscience Independent Project*)

- Building machine learning models to predict emotional states using EEG, ECG, and multimodal signals from the **DREAMER** dataset (DEAP integration in progress).
- Evaluating model generalizability across sample-dependent, sample-independent, and few-shot learning paradigms.

MISCELLANEOUS

Languages: English (native); Mandarin (native); French & Spanish & Latin (9 in GCSE)

Co-curricular Activities: Member of Oriel College Boat Club first boat for two years with 20 hours + weekly commitment; 3/78 in Torpids (Oxford's inter-college race) 2023, 1st place in Bedford Head 2023, 3rd place in National School Regatta's 15B category 2018; finished a solo 100km charity ergo under 9 hours.

Interests: Rowing, basketball, tennis, violin, photography

Societies: Oxford neuroscience society (Cortex club) co-president (2025-2026), Oxford Union, Physics Society, SynBio Society, Oxford society of aging and longevity