Yihan Zhao

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Education Background

Tsinghua University (THU), Beijing, China Aug 2020 – Jul 2024

Bachelor of Engineering – Department of Electronic Engineering

- **Recipient of National Scholarship (Top 3 / 245 students)**
- **GPA**: 3.94/4.0 **Ranking:** 7 / 251

Relevant Coursework: Calculus, Discrete Mathematics, Probability and Stochastic Processes, Fundamentals of Electronic Circuits and Systems, Data and Algorithms, Fundamentals of Digital Logic and Processors, Computer Program Design, Management as a Perspectives, Organizational Behaviors.

Harvard University, Cambridge, United States Dec 2022 – May 2023

- Liberal Art & Science, Harvard College, Visiting Undergraduate Student
- Visiting Scholar at Harvard Medical School, Department of Biomedical Informatics

Relevant Coursework: Bayesian Data Analysis (Graduate-level), Biological & Artificial Intelligence Systems

Stanford University, Palo Alto, United States Sept 2024 – Jul 2026

- Biomedical Data Science, Stanford School of Medicine, Incoming Master Student

Research

Motor Intention perception and Robotic Control based on Neural Signal Processing Sept 2021– Jun 2022

Research Assistant; Advisor: Milin. Zhang, Associate Professor, Department of Electronic Engineering, THU

- Developed a human motor intention preceptive algorithm based on deep learning and human kinetic models, which decodes human motor intention from surface electromyography (sEMG) and electroencephalogram (EEG) signals; achieved 95% accuracy on the collected dataset and 80% accuracy in real-world tests.
- Designed a motor controlling protocol for multi-degree-of-freedom robotic arm system and an RL-based temporal-aware controller to output steady control stream and enable smooth mechanical movements.
- Prototyped the algorithm on the Leju academic robot; collaborated with Beijing Tsinghua Changgung Hospital to conduct use tests and refine the prototype in real-life scenarios; integrating the refined robotic prototypes with neural sensor array for medical usage and scale commercialization – please find a demo video here.

Multimodal Knowledge Graph Representation Learning of Clinical Concepts and Genetic Variants

Research Assistant; Advisor: Tian'xi Cai, Professor, DBMI, Harvard Medical School Feb 2023 – Present

- Built a medical knowledge graph to represent medical entities, including drugs, genotypes, phenotypes, and diseases based on entities' semantic information, biochemical dependencies, molecular structure, relation pairs and recordings from electronic health records (EHRs).
- Designed a GNN-based autoencoder model to align concepts from multiple data sources and learn hyperbolic embeddings for downstream tasks such as patient profiling, precision medicine and drug discovery.
- Conducted a case study on a patient cohort from MGB biobank, performing profiling for each patient to predict diseases; revealed that utilization of our embedding significantly enhances prediction performance.

Semi-supervised deep learning algorithms for individual risk prediction with EHRs Jun 2022 – Feb 2023

Research Assistant; Advisor: Jue Hou, Assistant Professor, Biostatics, UMN

- Developed a novel three-step cascade model, comprised of an unsupervised surrogate derivation module, an imputative data augmentation module, and a DL-based predictive module, to exploit clinical information from EHRs to fertilize downstream tasks; outperformed SOTA models by 7% when predicting Type-II diabetes.
- Generated four simulation datasets with assumed stochastic distributions and survival models to finetune our model and to compare the model's performance with other DL-based survival analysis methods.

Publication & Manuscripts

[1] **(Cell Patterns, Published)** Jun Wen, Jue Hou, Clara-Lea Bonzel, Yihan Zhao, Chuan Hong, Junwei Lu, Kelly Cho, Tianxi Cai. "LATTE: Label-efficient Incident Phenotyping from Longitudinal Electronic Health Records"

[2] **(JBI, Submitted)** Isabelle-Emmanuella Noguesa, Jun Wen, Yihan Zhao, Clara-Lea Bonzel, Yucong Lin, Shike Xu, Jue Hou∗, Tianxi Cai. "Semi-supervised Double Deep Learning Temporal Risk Prediction (SeDDLeR) with Electronic Health Records"

Entrepreneurship & Internship

MindOS *CEO Secretary* Jun 2024 – Present

- Fund-Raising Secretary-General: Prepare fund-raising and pitching materials for pitching-competition, hackathon sharing and investor pitches. Engaged with influential tech-media such as Bloomberg and 36Kr, and top investors like Sequoia and Zhen. Successfully raised $4 million to date, with a goal of $10 million by the end of Q3.
- Public-Relationship Secretary-General: Set up domestic and international Branding Campaign to increment brand influence. Developed a comprehensive PR strategy matrix including branding campaigns, advertisements, media exposure, hackathon pitches, and roadshows. Responsible for resource linking, material preparation, and event coordination.
- Industrial-Cooperation Secretary-General: Conduct due diligence on potential partner companies and competitors. Prepare materials and participate in negotiations.

MiraclePlus(former YC China) *Early-stage Enterprise Analyst Intern* Jun 2023 – Sept 2023

- Sourced potential startup founders from worldwide top universities, key labs, entrepreneur clubs, and founder hackathons; provided insights on cutting-edge technology trends, PMF building, and marking strategy.
- Conducted industry research on topics including business model analysis, founder relationship, expert interviews and value chain validation, drafted due diligence reports for potential projects based on collected featured Chinese market data quantitative analysis, which were presented to the Investment Committee.

Leadership and Activities

[SiYuan] Student Leadership Scholarship (**38** student university-wide)**,** *Tsinghua University* May 2021– Jul 2024

- Selected to join the training program for top students at Tsinghua University, with only one student from each department selecte; received comprehensive training in leadership, social responsibility, domestic and international insights, scientific tastes and entrepreneurship.
- Chaired the Leadership Round-table Forum; invited successful entrepreneurs from Tsinghua Entrepreneur and Executive Club (TEEC) to share their insights on self-achievement and entrepreneurship.

THUEE Student Union, Vice President of Liaison, *Tsinghua University* Feb 2022 – Jan 2023

- Maintained alumni-network through organizing monthly salon, inviting industrial sharing and hosting ceremonial alumni-returning days. Developed 'Alumni-Growth-Program' to help alumni connect to our powerful alumni network, learning from successful alumni' experiences and connect potential resources.
- Connect campus affairs with social entities. Raised funding for student-feasts. Organized 'employing day' to offer convince for graduation student with working opportunities. Built 'Internship-Network' website to connect student on campus with internship opportunities.

Honors and Awards

- **National Second Prize in 36th CPhO** (Chinese Physics Olympics, 150 nationwide)
- **National Scholarship** (Top 3 / 245 students, 0.2% nationwide)

Skills and Others

Language: Chinese (Native); English (Fluent, TOEFL 109, Speaking 25)

Programming languages: Familiar with Python and has written C++, R, MATLAB, Verilog

Libraries and Tools: PyTorch, Cadence, Git, Arduino, LaTeX