Dayu Xia

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Education

Zhejiang University 2022.09 - 2026.06
B.Eng. in Mechanical Engineering *GPA: 3.783/4.0, Rank: 6/56*
University of Illinois Urbana-Champaign (Dual-Degree Program) 2022.09 - 2026.06
B.S. in Mechanical Engineering (minor in Mathematics, pending) *GPA: 3.89/4.0*

Coursework

Selective Courses: Calculus (A), Differential Equations (A+), Linear Algebra (A+), Probability Theory (A+), Numerical Analysis (A+), Intro. to Computing (Python & MatLab) (A+), Thermo & Quantum Physics (A), Analog Circuits & Systems (A+), Fluid Dynamics (A+), Mechanical Design (A+), Dynamics of Mechanical Systems (A+)
Courses via Linkedin Learning: Discrete Mathematics, C Programming, Applied Machine Learning: Algorithms

Skills

Languages: Python, C, LaTeX, SQL, Julia
English: TOEFL: 107, CET6: 604, CET4: 681
Miscellaneous: GitHub, RNN & Transformer Architecture Developing, Fusion 360, Solidworks, Adobe & Office Toolset

Academic/Industrial Experience

University of Illinois Urbana-Champaign | *Research Assistant, Supervised by Prof. Dusan Stipanovic* 2024.06 –
Research Thesis: Robotic Rehabilitation Therapy through Trajectory & Assistance Level Planning

- Using LSTM and Transformer architecture to predict patients' handwriting patterns via window shifting normalization
- Developing projection method for white-box training the GRU network
- Stability and linearization analysis of GRU and LSTM neural networks around equilibrium

Zhejiang University | *Research Assistant, Supervised by Prof. Meng Zhang* 2023.09 – 2023.12
Research Thesis: Persuasive GPT

- Integrate ChatPDF and ChatGPT to construct knowledge embedding between users and the LLM
- Construct website frame using React and Java script, achieving an interactable purpose to collect conversation data

Tellgen Corporation | *Data Analyst Intern, Supervised by Mr. Xiaofeng Zhang* 2023.07 – 2023.08
Served in the Department of Applied Engineering

- Achieve experimental data visualization through Python
- Construct classifier through algorithms such as K-Nearest Neighbor and K-Means Clustering to divide and co-analyze molecular meta data and further the infected cases

Selective Awards

Provincial Scholarship (3%), **Zhejiang Provincial Government** 2024.09
Participant, **HKUST Summer Camp for Elite Students (hosted by Dept. of IEDA)** 2024.07
Silver Metal, **China International College Students' Innovation Competition** 2023.11
Second Prize, **Zhejiang University Student Scholarship** 2023.09
First Prize, **Zhejiang University Student Winter Vacation Social Practice** 2023.05
Honorable Mention, **Mathematical Contest In Modeling** 2023.02
Second Prize, **The Chinese Mathematics Competitions** 2022.11

Projects

Integrated report, "Multi-dimensional Comparison Report Between Chengdu and Hangzhou 2023.05

- After field inspection and interview, we summarize a multi-dimensional comparison report between the two "semi-tier-one" cities in China. The aim is to provide a guide for younger generation while faced with the question of where to settle down. As living expenses are rocketing in the traditional tier-one cities (Beijing, Shanghai, Guangzhou & Shenzhen), more and more people are moving out and seeking more economic choices.
- The report was awarded with the **First Prize** among other contestants of the Zhejiang University Student Winter Vacation Social Practice in 2023.

Integrated report, "Prediction and Analysis of the Wordle Game" 2023.02

- We predict the results counts and the difficulty distribution of the famous Wordle game. Entropy-alike familiarity is defined to program a human-alike game solver, while regression and clustering algorithms are used to categorize candidate words.
- The report was awarded with the **Honorable Mention** among other contestants of the Mathematical Contest In Modeling in 2023.

Publications

Robotic Trail Maker Platform Facilitating Rehabilitation of Neurological Conditions: For Clinical Use pending