



# Dayu Xia

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## EDUCATION

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

## COURSEWORK & SKILLS

**Selectivce 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+); Discrete Mathematics, C Programming, Applied Machine Learning: Algorithms (via Linkedin Learning)

**English:** TOEFL: 107, CET-6: 604, CET-4: 680

**Programming Languages:** Python, C,  $\text{\LaTeX}$ , SQL, Julia

**Miscellaneous:** Pytorch, Arduino, GitHub, SolidWorks, Adobe Toolkit

## PUBLICATIONS

**D. Xia, H. Nisar, S. Annamraju, D. Stipanovic,** "Robotic Trail Maker Platform for Rehabilitation in Neurological Conditions: Clinical Use Cases", working paper to be submitted to IEEE TNSRE, under review.

## 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

- The patient classification accuracy using the 1D-CNN + Attention + Bi-LSTM architecture improved by nearly 10% compared to other state-of-the-art (SOTA) models.
- Using Inverse Reinforcement Learning (Inverse RL) and Assistance-As-Needed techniques for auxiliary level planning.
- 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

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

## PROJECTS

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<b>Integrated report, "Multi-dimensional Comparison Report Between Chengdu and Hangzhou</b>	2023.05
<ul style="list-style-type: none"><li>• 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 &amp; Shenzhen), more and more people are moving out and seeking more economic choices.</li><li>• The report was awarded with the <b>First Prize</b> among other contestants of the Zhejiang University Student Winter Vacation Social Practice in 2023.</li></ul>	
<b>Integrated report, "Prediction and Analysis of the Wordle Game"</b>	2023.02
<ul style="list-style-type: none"><li>• We predict the results counts and the difficulty distribution of the famous Wordle game. Entropy-like familiarity is defined to program a human-alike game solver, while regression and clustering algorithms are used to categorize candidate words.</li><li>• The report was awarded with the <b>Honorable Mention</b> among other contestants of the Mathematical Contest In Modeling in 2023.</li></ul>	