

Dayu Xia

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EDUCATION

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| Zhejiang University | 2022.09 - 2026.06 |
| <i>B.Eng. in Mechanical Engineering</i> | <i>GPA: 3.81/4.0, Rank: 6/56</i> |
| University of Illinois Urbana-Champaign (Dual-Degree Program) | 2022.09 - 2026.06 |
| <i>B.S. in Mechanical Engineering (minor in Mathematics)</i> | <i>GPA: 3.91/4.0</i> |

COURSEWORK & SKILLS

Selective Courses: Calculus, Differential Equations, Linear Algebra, Probability Theory, Numerical Analysis, Quantum Physics, Fluid Dynamics, Mechanical Design, Analog Circuits & Systems, Signal Processing, Data Structures

English: TOEFL: 107, CET-6: 604, CET-4: 680 **Programming Languages:** Python, C++, \LaTeX
Miscellaneous: Pytorch, Arduino, GitHub, SolidWorks, Adobe Toolkit

PUBLICATIONS

D. Xia*, **S. Annamraju***, **H. Nisar***, S. A. Deka, A. Horowitz, N. Milković, and D. M. Stipanović, "Robotic Trail Maker Platform for Rehabilitation in Neurological Conditions: Clinical Use Cases", submitted to IEEE TNSRE, under review.

RESEARCH EXPERIENCE

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| Aalto University <i>Supervised by Prof. Shankar Deka</i> | 2025.05 – |
| Research Thesis: Hierarchical Inverse Model Predictive Control via Data-driven Stochastic Modeling | |
| <ul style="list-style-type: none"> Achieve Imitation Learning by utilizing a bi-level structure combining optimal control and optimization. Model cost functions by data-driven stochastic Model Predictive Control with receding horizon. | |
| University of Illinois Urbana-Champaign <i>Supervised by Prof. Dušan Stipanović</i> | 2024.06 – 2025.04 |
| Research Thesis: Robotic Rehabilitation Therapy via Trajectory & Assistance Level Planning | |
| <ul style="list-style-type: none"> Develop Conv@BiLSTM (1D-CNN + Attention + Bi-LSTM) architecture, patient classification accuracy improved by nearly 10% compared to other state-of-the-art models. Use Inverse RL and Assistance-As-Needed techniques for auxiliary level planning. | |
| Zhejiang University <i>Supervised by Prof. Liangjing Yang</i> | 2023.09 – 2023.12 |
| Research Thesis: Robotic Hand Feedback Control System via Haptic Sensing | |
| <ul style="list-style-type: none"> Redesign knuckle and palm structures via Solidworks to accommodate haptic sensors and motors. Construct a simulation environment based on Gazebo and ROS, facilitating hardware-software interface emulation. | |

SELECTIVE AWARDS & PROJECTS

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| <i>Provincial Scholarship (3%), Zhejiang Provincial Government</i> | 2024.09 |
| <i>Dean's List, Zhejiang University & University of Illinois Urbana Champaign</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 |