You Yuchen

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EDUCATION

Shanghai Jiaotong University, Shanghai, China   **expected graduation:** Jun. 2026

      Bachelor of Mechanical Engineering

      Core GPA 3.88/4.00, ranking 2/60

RESEARCH

LLM-based Robotic Arms Natural Language Task Handling [repo]

Advisor: Yutong Ban   Shanghai Jiao Tong University

      Objectives: Use the LLM and the Flexiv 7 DOF Robot Arm with ZED Depth Camera to handle natural language input and solve daily tasks like solve the jigsaw puzzles.

      Contribution: Lead the robotic arm control part, basing on the Flexiv-RDK frame, use the reverse/forward kinematic solution to make fluent control of the 7 DOF manipulator to handle accurate motion.

SELECTED PROJECTS

Auto Sentry Robot Control [repo]

Chinese University National Robot Competition-Robomaster Championship

- **Objectives**: Auto navigation and decision-making sentry robot with double gimbal and 4 dial wheel chassis beating enemy robots base on the STM32-F407 board.
- **Contributions**: Lead the circuit design of the auto sentry robot; Lead the control algorithm of the double gimbal and fast-fluent response of the four dial wheel chassis; Lead the design of the CAN/ UART communication with CV process and laser radar; Lead the IMU-based absolute pose control.

CNN-based Medical CT Image Diagnosis and COVID Detect [repo]

- **Objectives: use the dataset of abundant CT images of the covid and non-covid cases to help train models that can recognize the new CT images to decide whether covid.**
- **Contribution:** Transform images to tensors and normalize them; Use Unet model to better train my personal model; Save the trained one and evaluate it with the test datasets.

Web Game: Come On Lei [repo] [product]

ENGR 1000J Software Engineering Term Project

- **Objectives:** design a web parkour game which features the ninja style
- **Contributions:** design the mechanics of the game and design all the user interface and fluent animation of the game.

SELECTED HONORS & AWARDS

- 23rd National College Robot Competition·RMUC Eastern Region Champion   May 2024
- 23rd National College Robot Competition·RMUL champion   April 2024
- 2023 Shanghai Jiao Tong University scholarship level B   December 2023
- 2023 University Physics Competition Silver Medal   November 2023
- 2023 Wu Jiong Sun Jie Sunshine Scholarship   November 2023
- 22nd National College Robot Competition·RMUC National Champion   August 2023

- SJTU Social Practice Third Prize   August 2023

EXTRACURRICULAR ACTIVITIES

Yunhan Jiaolong Robot Club, Shanghai   *Electric Control Department member, Sept. 2022 - Now*
- Lead the electric control part (coding, circuit designing, controlling, building physical models) of the Auto Sentry robot, which won MVP in the competition many times
- Help organize the "Yunhan Cup" SJTU robot on-campus competition

SKILLS & CERTIFICATIONS

- TOEFL grade 103 / 120   2023/4/28
- Programming Languages: C++, C, Python, MATLAB, Git, LaTeX, Elm, HTML, shell, etc.
- Frameworks: PyTorch, FreeRTOS, OpenCV, Flexiv_C++, Django
- Deep Learning: CNN, GAN, RNN, etc

TEACHING EXPERIENCE

Shanghai Jiao Tong University   Shanghai, China
- SU. 2024 ENGR1000J (Introduction to Soft Engineering), Teaching Assistant

SELECTED COMMUNITY SERVICE

UM-SJTU Joint Institute Youth Volunteer Team   Sept. 2022 – Sept. 2023
- Co-Planner of the Yunan Support teaching activities   Shanghai, China

UM-SJTU Joint Institute Business Division   Sept. 2022 – Sept. 2023
- Co-author of UM-SJTU JI Student handbook.
- Administrator of the JI Business Piazza Website

Old Friends Youth Team, Shanghai   June 2023 – September 2023
- Participate in communication activities between young and elderly friends