

Yutian Zhang

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EDUCATION

China University of Petroleum-Beijing (CUP) *Expected June 2025*
Bachelor of Computer Science (cGPA: 3.87 / 5.00, Average Score: 88.73, Grades for 5 semesters) *Beijing, China*

- **Rank:** 1/93 in 1st year, 2/132 in 2nd year, Top 1%
- **Relevant Coursework:** Data Structures (C++), Design and Analysis of Algorithms, Computer Organization Principles, Assembly Language and Interface Technology, Digital logic, Operating System

Guangdong Experimental High School *Sept. 2018 – May 2021*
HSC, Class XII *Guangzhou, China*

TECHNICAL SKILLS & INTEREST

Technologies: C, C++, Python, Java, OpenCV, RL, Yolo, PyTorch, Linux, QT, MySQL, HDFS, Minio, Dameng Database, Unity, Issca Gym, Pybullet, Vue
Languages: Mandarin, Cantonese, English (TOEFL, CET-6, CET-4)
Documentation and Visualization Tools: Skilled in using LaTeX, Origin, Visio, Illustrator, Microsoft Office and PS
Research Interest: Robot Control and Path planning, Computer Vision, Machine Learning, Data Analysis

PUBLICATION

Yutian Zhang, Yuanfeng Lian. “Dual Lyapunov Optimization Enhanced Reinforcement Learning for Path Planning.” IEEE Robotics and Automation Letters. (Currently revising. First Submitted on April 13, 2024)
Yu Hong, **Zhang Yutian**. “Research on the Digital Talent Demand Forecasting Model Based on Grey Theory and Particle Swarm Optimization Algorithm.” Explore Science.(2023) (Chinese publication)

PROJECTS & RESEARCH EXPERIENCE

Robot Vision and Control Application | *Beijing Key Lab of Petroleum Data Mining* *Aug. 2022 – Present*

- Propose a Lyapunov-optimized approach based on ST-data for task allocation and safe navigation through RL.
- Integrated Yolov5 and OpenCV to enhance target detection and localization, optimizing perceptual ability.
- Leveraged existing SDKs of Unitree and DEEP Robotics quadruped robots to design motion control algorithms
- Conducted virtual experiments for path planning on the iLab-X national virtual simulation platform.
- Received four awards in robotics contests and authored a research paper.

HKUST(GZ) RedBird Challenge Camp *Jun. 2024 - Jul. 2024*

- Take courses on empathy-based design thinking, participate in a 5-day, 3-location field trip to investigate deeply into the pain points that exist in 16 occupations of different levels of villages.
- Aiming at sanitation workers in urban villages of first-tier cities, we complete a startup project integrating task assignment, path planning and psychological LLM on “Moving Oasis”, a new cleaning vehicle.

Data Analysis of the “Momentum” in Tennis Match | *Student Group Leader* *Jan. 2024 – Feb. 2024*

- Constructed an evaluation model to evaluate the athletes’ performance based on provided data.
- Proposed an XGBoost-based model for predicting “momentum” shifts during the match.
- Determined factors associated with “momentum” through linear regression and logistic regression.
- Finished a paper and submitted to MCM-ICM competition.

Wearable Physiological Monitoring System | *Undergraduate Training Program* *Apr. 2023 – Aug. 2023*

- Reviewed literature for key factors of field workers health: temperature, heart rate, and blood oxygen levels.
- Collected physiological data by using Arduino sensors and Xiaomi Band.
- Applied algorithmic analysis to facilitate initial health assessments for human health.

Cloud-Based Logistics Data Management System | *Student Group Leader* *Apr. 2023 – June 2023*

- Utilized Dameng Cloud-Native Big Data Platform for or intelligent logistics data store, analysis and display.
- Implemented a data governance module for different format data and erroneous data, all connected to our Web UI.
- Developed system for “China Software Cup” and applied for software copyright.

UI and Application Development with Qt Framework | *Student Group Leader* *Apr. 2022 – May. 2022*

- Designed a bank management system with core operations with cross-platform capabilities, available on Github.
- Developed a visualization tool to illustrate hierarchical tree traversal algorithms, available on Github.

AWARDS AND HONORS

- **National Scholarship:** 8,000 RMB for ranking first in the major
- **Tarim Scholarship:** 5,000 RMB for ranking second in the major
- **The 2024 China Robotics and Artificial Intelligence Competition - Quadruped robot Rapid Logistics**
Two teams won first prize at the national final. Served as leader of both teams.
- **The 2022 RAICOM Robot Developer Competition (CAIR) - Materials Transportation**
National second prize (Rank 5th) and second prize in northern China division
- **The 2024 Mathematical Contest in Modeling:** Honorable Mention
- **The 2023 China Collegiate Computing Contest - Group Programming Ladder Tournament**
National second prize and second prize in northern China division
- **National College Student Algorithm Design and Programming Challenge (Autumn Competition)**
Silver Award in 2023 and bronze award in 2022
- **The 2023 China Robot Competition and the RoboCup China Open**
National third prize in rescue quadruped robot group
- **The Fifth National Colleges and Universities Computer Proficiency Challenge**
National third prize and second prize in northern China division
- **The China University Intelligent Robot Creative Competition:** Second prize in 2023
- **“LANQIAO Cup” National Software and IT Professionals Contest:** Third prizes in 2022 and 2023
- **The “CHUANZHI Cup” National IT Skills Competition:** Third prizes in 2023
- **RAICOM Robot Developer Competition (CAIP):** Third prize in 2022 and 2023
- **Turkmenistan 1st International Open Internet Olympiad in Informatics**
- **“JUNMA Cup” Programming Competition**
- **Merit Student of China University of Petroleum-Beijing**
- **AI-900: Microsoft Azure AI Fundamentals Certification**
- **CCF CSP Certification**

INTERNSHIP

Biomedical Data and Supercomputing Center, Chinese Academy of Sciences *Jan. 2024*

- Understand and experience the operation mode of supercomputing centre.
- Assisted in the daily inspection maintenance of the server room.
- Involved in some minor data processing and development work.

Guangdong Yunwang Communication Co., Ltd. *July 2023*

- Learned about the operation of smart parking platforms.
- Assisted in the development of an efficient parking payment system.
- Learned and worked on licence plate number detection in the visual recognition development team.

LEADERSHIP & EXTRACURRICULAR EXPERIENCE

Member of “Baiyou” Student Speaker’s Group of CUP *Mar. 2023 – Present*

- Delivered motivational speeches as an outstanding student representative to foster peers’ holistic development.

Study Secretary of Major *Sept. 2021 – Present*

- Managed academic affairs, coordinated study groups, and facilitate academic competitions and activities.

Member of CUP Algorithm Association *Oct. 2022 – Present*

- Participate in competitive programming and algorithmic research and actively represent the school in competitions.

Member of CUP Innovation and Entrepreneurship Center *Sept. 2021 – May 2022*

- Promoting innovation and entrepreneurship training programmes and assisting with departmental research defence.

Alumni Interview Social Practice Group of CUP *Jul. 2023*

- Interviewed alumni from Huawei, PetroChina, and the Shenzhen Alumni Association, as outstanding practitioner.

Campus Volunteer Group of CUP *Sept. 2021 – Present*

- Participated in community volunteering and campus volunteering, accumulating a total of 89.5 hours.