

YU HUO

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Shenzhen, Guangdong - 518172, China


OBJECTIVE

Seeking a challenging position in the field of Artificial Intelligence and Machine Learning to leverage my expertise in Large Language Models (LLMs) and code generation. Aiming to contribute to innovative projects at the intersection of cutting-edge AI technologies, natural language processing, and practical problem-solving in software development and automation.



EDUCATION

- The Chinese University of Hong Kong (Shenzhen)** Sep 2022 - Present
Bachelor of Engineering — Electronic and Computer Engineering (Computer Engineering) Shenzhen, China
 - GPA: [3.57]/4.00, Major Rank: [7]/30
 - Core Courses: Machine Learning, Fundamentals of Artificial Intelligence, Design and Analysis of Algorithms, Optimization, Linear Algebra, Data Structures, Database Systems, Software Engineering, Introduction to Robotics, Stochastic Processes, Discrete Mathematics, Probability and Statistics, Calculus I & II, Independent Study I & II
- The Chinese University of Hong Kong** Jul 2024 - Aug 2024
Summer School Hong Kong, China
 - Core Courses: Energy and Green Society, Government and Politics of China
- Guangzhou No.2 High School** Sep 2016 - Jun 2022
High School Guangzhou, China

EXPERIENCE

- Huawei Technologies Co., Ltd.**  Jul 2025 - Present
AI Algorithm Engineer Shenzhen, China
 - Assisted in improving the performance of Codemate, an AI-powered code completion tool, by fine-tuning large models using preprocessed code data and SFT data extraction, resulting in a 5-10% improvement in tool performance.
 - Applied high-quality corpus filtering and integrated RAG-based techniques, leading to a significant increase in the adoption rate of the tool.
 - Conducted detailed analysis on industry code database to identify potential improvements, contributing to the enhancement of internal tool usability and performance.
 - Collaborated with cross-functional teams to present findings, achieving high internal recognition for tool optimization.

PROJECTS

- CUHK(SZ) Library Management System: Full-stack library management system** Nov 2024 – Dec 2024
Tools: Python Flask, Vue.js, SQLite, SQLAlchemy, JWT, Bcrypt, Vuetify 
 - Developed a full-stack library management system, integrating physical and digital resources, enabling efficient management of books, user accounts, loans, holds, and fines.
 - Implemented user registration and authentication using Flask and JWT, ensuring secure access for both patrons and librarians, with hashed passwords using Bcrypt.
 - Created a scalable relational database schema in SQLite, tracking books, users, loans, holds, and fines, ensuring data consistency with SQLAlchemy ORM.
 - Applied Vue.js for the frontend, creating intuitive components like book search, loan management, and user dashboards to improve user experience and facilitate seamless interactions.
- UR5 Collaborative Manipulator: Kinematic modeling and trajectory planning** Nov 2024 – Dec 2024
Tools: MATLAB, Robotics Toolbox, Denavit-Hartenberg (D-H) method 
 - Developed a comprehensive kinematic model for the UR5 manipulator using the Denavit-Hartenberg (D-H) method, deriving forward and inverse kinematic solutions for precise control.
 - Implemented trajectory planning in joint space and Cartesian space, achieving smooth motion paths with optimized joint displacements and end-effector accuracy.
 - Created MATLAB simulations with the Robotics Toolbox to visualize and validate the robot's kinematic behavior and trajectory planning, ensuring real-time execution in dynamic environments.
 - Developed inverse kinematics solutions using the D-H method for improved computational efficiency in real-time control, enhancing motion flexibility and obstacle avoidance.

• **UChat: A real-time multi-user chat application**

Jan 2023 – May 2023

Tools: *Java Spring Boot, WebSocket, MySQL, HTML, CSS, JavaScript*



- Developed a multi-client real-time chat application using Java Spring Boot and WebSocket, enabling users to communicate instantly within a shared chat room.
- Implemented a user login and registration system with MySQL database for storing user credentials and friend lists, allowing secure authentication.
- Created an intuitive front-end interface using HTML, CSS, and JavaScript, enabling seamless interactions for both single and group chats.
- Developed a friend request feature, allowing users to add and chat privately with friends, streamlining the communication process.

PATENTS AND PUBLICATIONS




C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

- [S.1] Yan, H., Huo, Y., Lu, M., Ou, W., Shi, X., Shi, R., and Tang, X. (2025). **Optimal Boost Design for Auto-bidding Mechanism with Publisher Quality Constraints**. In *arXiv preprint arXiv:2508.08772*, 2025. Manuscript submitted for publication in *AAAI*.
- [C.1] Huo, Y., Li, Y., and Tang, X. (2025). **FedGF: Layer-Wise Federated Learning with Group Fairness Guarantees**. In *Proceedings of the International Conference on Intelligent Computing*, pp. 396–408, Springer, 2025.

SKILLS

- **Programming Languages:** Python, C/C++, Java
- **Web Technologies:** Flask, Spring Boot, Vue.js, HTML, CSS, JavaScript
- **Database Systems:** MySQL, PostgreSQL, SQLite
- **Data Science & Machine Learning:** PyTorch, Scikit-learn, TensorFlow, Keras, Pandas, NumPy
- **Cloud Technologies:** AWS, Google Cloud Platform (GCP), Microsoft Azure
- **DevOps & Version Control:** Git, Docker, Maven
- **Specialized Area:** Machine Learning, Deep Learning, Reinforcement learning, Federated Learning, Large Language Models, Robotics
- **Mathematical & Statistical Tools:** Linear Algebra, Optimization, Probability and Statistics, Calculus, Discrete Mathematics
- **Other Tools & Technologies:** MATLAB, SQL, L^AT_EX
- **Research Skills:** Data Analysis, Simulation, Scientific Research, Report Writing, Algorithm Development, Model Evaluation

HONORS AND AWARDS

- **Undergraduate Research Award** Mar 2025
The School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen 
 - Awarded a cash grant of 1,000 RMB per month to support an independent, faculty-guided research project in the field of AI and machine learning.
 - Recognized for outstanding academic performance and the potential to produce high-quality academic papers and research output.
- **Dean’s List** Aug 2022 - Aug 2024
The School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen 
 - Selected for the prestigious Dean’s List Award for outstanding academic performance during the 2022-2024 academic year.
 - Recognized for achieving high academic standards and maintaining exceptional performance throughout the year.
- **Meritorious Winner** Jan 2025
Mathematical Contest in Modeling (MCM), Consortium for Mathematics and its Applications (COMAP) 
 - Achieved Meritorious Winner status in the 2025 Mathematical Contest in Modeling for a project focused on sustainable tourism management in Juneau, Alaska.
 - Applied deep reinforcement learning and dynamic programming to optimize tourism, environment, and social welfare, resulting in a 40% increase in tourism revenue and a 25% reduction in carbon emissions.

LEADERSHIP EXPERIENCE

- **Second Author, "Optimal Boost Design for Auto-bidding Mechanism with Publisher Quality Constraints"***Mar 2025*
The Chinese University of Hong Kong, Shenzhen [Globe]
 - Led the research project as the first author, focusing on designing optimal boost factors for auto-bidding in online advertising platforms.
 - Developed a novel Boosting algorithm, incorporating publisher quality constraints, which improved welfare efficiency by 2-6% compared to existing methods.
 - Conducted theoretical analysis and designed an efficient three-party auction framework involving advertisers, publishers, and the platform, balancing commercial and quality metrics.
 - Presented the findings at ICIC 2025, contributing to advancing the understanding of incentive alignment in multi-stakeholder advertising ecosystems.
- **First Author, "FedGF: Layer-wise Federated Learning with Group Fairness Guarantees"***Mar 2024 - Mar 2025*
International Conference on Intelligent Computing (ICIC 2025), Springer [Globe]
 - Led the research project on Federated Learning (FL), proposing a novel method (FedGF) to incorporate both client-level and group-level fairness in federated learning systems.
 - Conducted extensive experiments on benchmark datasets (FMNIST, CIFAR-10) using multi-objective optimization to ensure fairness without sacrificing model accuracy, achieving 78
 - Developed and implemented the FedGF approach using advanced machine learning algorithms and statistical methods to resolve gradient conflicts at both the model and layer levels.
 - Contributed to writing and presenting the paper, which was accepted at ICIC 2025, significantly advancing fairness in FL models.
- **Lead Programmer, Mathematical Contest in Modeling (MCM)***Jan 2025*
Consortium for Mathematics and its Applications (COMAP) [Globe]
 - Led the programming team in developing a Deep Reinforcement Learning (DRL) model using Python and PyTorch to optimize sustainable tourism management in Juneau, Alaska.
 - Designed and implemented the Deep Deterministic Policy Gradient (DDPG) algorithm to balance tourism revenue, environmental protection, and social welfare, achieving a 40
 - Collaborated with a team of five, applying advanced machine learning techniques to develop a dynamic system model addressing the trade-off between economic benefits and ecological preservation.
 - Conducted experiments to validate the model, demonstrating that the system can maintain glacier size above critical thresholds while increasing resident satisfaction by 300%.

ADDITIONAL INFORMATION

Languages: English (Fluent), Mandarin (Native)
Interests: Music, Fitness, Video Games, Technology

REFERENCES

1. **Xiaoying Tang**
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The Chinese University of Hong Kong (Shenzhen)
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