QIANSHU WANG

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SUMMARY

Motivated and detail-oriented MPhil student in Human-Inspired Artificial Intelligence at the University of Cambridge with a strong foundation in data science, machine learning, and software development. Skilled in the design of user-centric systems, with a particular interest in Human-AI collaboration, Human-centered AI and Responsible AI

EDUCATION

The University of Cambridge Oct 2025 - June 2026
MPhil Human Inspired Artificial Intelligence To be completed
Relevant courses: Introduction to Human-Inspired AI, Conversational AI Design and Development, AI for Social Science, Algorithms for Human-AI Collaboration, Responsible AI

The University of Edinburgh Sept 2021 - June 2025
BSc (Hons) Computer Science and Management Science **Final Grade**: 78% (First Class Honor)
Relevant courses: Usable Security And Privacy, Human Computer Interaction, Automatic Speech Recognition Object Oriented Programming, Foundation of Data Science, Introduction to Algorithm and Data Structure
Award: Class Medal (Top Performing Student)

RESEARCH EXPERIENCE

Improving Access Control for Shared Objects in AR/VR Environments Sep 2024 – Present
Undergraduate Dissertation, University of Edinburgh, Edinburgh, UK

- Conducted semi-structured interviews with 30 participants to explore user perspectives on access control, privacy, and security in multi-user AR/VR platforms.
- Applied thematic analysis to uncover user expectations and concerns, and translated findings into a set of user-informed access control policies tailored for shared virtual environments.
- Implemented the proposed policies in a prototype access control system using C++ and Unity.

HOVER: Generalized Retargeting for Dexterous Manipulation Jul 2025 – Sep 2025
Research Intern, DexRobot, Shanghai, CN

- Reproduced dexterous hand training and evaluation for baseline comparison, conducting parameter sweeps across different variables to identify optimal configurations.
- Designed and implemented a closed-loop PPO-based reinforcement learning algorithm, achieving a 15.3% improvement in AUC over the DexMachina baseline and a task success rate of over 90% in controlled lab settings.
- Integrated a neural network-based retargeting policy (Retarget-NN) into the closed-loop policy, enabling real-time adaptation of the retargeting pipeline for dexterous manipulation tasks.
- Poster accepted at IROS 2025. Additional details are available on the project website and the GitHub repository.

Analyzing Code of Conduct Documents for Video Games Using BERT Sep 2024 – Dec 2024
Research Assistant, University of Edinburgh, Edinburgh, UK

- Used INCEpTION to perform semantic annotation on over 30 Code of Conduct (CoC) and Term of Services (ToS) documents, contributing to the development of a high-quality dataset for NLP-based analysis.
- Reviewed NLP model outputs and annotated misclassified examples with likely failure reasons to refine database.
- Authored a structured literature review on video game Codes of Conduct, persuasive interaction design, and safety governance to inform annotation schema development and model assessment.

Exploring Security and Privacy Concerns Related to Identity Construction in Metaverse May 2024 – Aug 2024
Junior Research Assistant, University of Edinburgh, Edinburgh, UK

- Collected over 500 records from Reddit using a custom-built crawler based on the Reddit PRAW API. Filtered records using Boolean queries and automated the data gathering process.
- Applied thematic coding to analyze user perceptions and behaviors, identifying key themes and patterns related to security and privacy concerns. Conducted an in-depth analysis of over 20 records to uncover trends.

PROFESSIONAL EXPERIENCE

Software Development Intern (Java) May 2023 – Sept 2023

Zhejiang Jandar Technology Company,Hangzhou, CN

- Designed a security module for a public screen application tailored for use in local hospitals and offices. Applied key security principles such as encryption, digital signatures, certification, and secure handshaking protocols
- Devised and implemented a robust authentication system utilizing the SM3 Hash Algorithm and SM4 encryption algorithm. Mainly Used JNA library to interact with C libraries.

AI Development Intern October 2025 – Present

Folio.AI, Remote

- Designed and built FolioAI's LangGraph agent layer end-to-end, wiring technical, fundamental, options-flow, and news agents to shared MCP data sources and Gemini models for consistent insight generation.
- Authored the reusable JSON response envelope and orchestration logic so every agent emits structured, downstream-ready payloads across CLI, Python, and Studio entry points.

SELECTED PROJECTS

Automatic Speech Recognition System Optimization Oct 2023 - Dec 2023

Built and Optimized a WFST-based ASR system using OpenFst and the Viterbi algorithm

- Applied score-based and number-based beam pruning to to decrease computational overhead by up to 80%.
- Developed a bigram model that lowered substitution errors by 11.8%, and implemented Viterbi learning to automatically refine transition probabilities, achieving convergence within 3 iterations.
- Reduced Word Error Rate (WER) from 1.4470 to 0.2355 (an 84% improvement) through iterative system tuning.

Raytracer Renderer in C++ Oct 2024 - Nov 2024

Implemented a high-performance raytracer in C++, focusing on key features such as Blinn-Phong shading, materials, textures and scene handling via a custom JSON format.

- Designed and developed a full raytracing renderer, implementing fundamental techniques such as intersection tests with meshes, Blinn-Phong shading, reflection, refraction, and tone mapping.
- Enhanced the renderer with advanced features like path tracing, multi-sampling anti-aliasing, finite aperture defocus, defocus effects, multi-bounce path tracing, and soft shadows through area light sampling.
- Created and optimized an acceleration structure using a bounding volume hierarchy to speed up ray-object intersection calculations.

Analysis of Movie Success Database Apr 2023 – May 2023

Led a team of 3 members to conduct an analysis of the Movie Feature Database.

- Utilized Python, NumPy, Pandas, and Scikit-learn for data processing and feature selection.
- Implemented a Random Forest classifier to predict commercial success and artistic ratings, achieving accuracies of 0.821 for revenue/popularity and 0.623 for ratings.
- Applied A/B testing, demonstrating that movies longer than 120 min achieved 42% higher revenue and higher ratings than shorter films.
- Analyzed genre success rates using a Chi-square test, revealing that low-competition genres had a 64% success rate, significantly higher than 42% in high-competition genres.
- Performed feature importance analysis using a Random Forest model with SHAP values, identifying actor and director reputation as key success predictors, with 10% accuracy drop when removed.

TECHNICAL SKILLS

Programming: Python, Java, SQL, C, C++, R, Haskell, Scala
Framework/Libraries: Pytorch, Numpy, Matplotlib, Seaborn, Pandas, Scikit-learn, Spring Boot, MyBatis, JNA
3D Tools: Blender, Unity
Languages: English (Fluent), Chinese (Native), Italian (Native)