

HONGYI LUO

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EDUCATION

Bachelor of Science in Computer Science and Music

University of Illinois Urbana-Champaign

Honors: On the Dean's List

Sep 2021 - Expected Graduation: May 2025

GPA: 3.86/4.00

COURSEWORKS

Software Engineering	Java, C, C++, Python, Computer Systems, Software Engineering Lab, Functional Programming
Computation Theory	Discrete Structures, Data Structures, Algorithms, Programming Languages & Compilers, Models of Computation
Mathematics	Matrix Theory, Probability & Statistics for Computer Science
Applications	Game Development, Electronic Music Techniques, Music Computation
Future Courses	Database Systems, Data Mining, Artificial Intelligence, Machine Learning, Mobile Computing Application, User Interface

TECHNICAL SKILLS and LANGUAGES

Programming Languages	Java, C, C++, Python, Ocaml, JavaScript(JS), TypeScript(TS)
Frameworks and Tools	LangChain/LangGraph, LLM, OpenAI, Spring Boot, Git, Docker, MySQL, Redis, HTML, CSS, React, Webpack, JSON, Visual Studio Code, IntelliJ IDEA, Android Studio, Unreal Engine 5
Spoken Languages	English (proficient), Mandarin (native), Cantonese (native)

WORK EXPERIENCES

Jun 2024 – Aug 2024	Software Developer Intern <i>AI Research and Development Department, China Telecom See-Link Technology Co., Ltd., Guangzhou, China</i> <ul style="list-style-type: none">• Researched 5+ cutting-edge open source multi-agent frameworks, creating a comprehensive report• Developed recognition capabilities for video analysis, achieving 100% accuracy in identifying key objects/events• Developed a multi-agent system and LLM based application for generating insights on store operations and security• Maintained and debugged AI management platform code, resolving 10+ user-reported issues
Jun 2023 – Aug 2023	Software Developer Intern <i>Software Development Department, Unicorn Technology Development Co., Ltd., Guangzhou, China</i> <ul style="list-style-type: none">• Contributed to Hitachi Elevator Monitoring System for 1 central and 3 regional centers in China• Developed 10+ backend data interfaces integrating the Monitoring System with the Maintenance System
Aug 2022 – Sep 2022	Software Tester Part-time <i>School of Music, University of Illinois Urbana-Champaign, Champaign IL, USA</i> <ul style="list-style-type: none">• Performed User Acceptance Testing (UAT) for Harmonia© app and 2 associated websites, covering 100% of features• Identified and reported 10+ bugs, collaborating with developers to verify fixes, reducing post-release issues by 50%

PROJECT HIGHLIGHTS

Jul 2024 – Aug 2024	Store Insight Large Language Models · Prompt Engineering · Multi-agent · AgentScope · OpenAI · Python · Web Development · Web API · REST API · SaaS <ul style="list-style-type: none">• Developed a multi-agent system analyzing pre-processed video data to monitor store operations and security• Implemented ReAct algorithm and optimized it for query-specific actions, improving performance by 50%• Enabled natural language queries, allowing users to ask any question and receive relevant store insights• Enhanced the system to generate comprehensive analysis on store performance and safety based on user queries
Jun 2024 - Jun 2024	Video Analyzer Multimodal Large Language Models · Prompt Engineering · Multi-agent · RAG · LangChain · LangGraph · OpenAI · Python <ul style="list-style-type: none">• Developed a multi-agent application integrating LangChain and multimodal large language models (Multimodal LLM)• Implemented autonomous planning for video asset retrieval and analysis based on specific investigation tasks• Created objects/events recognition capabilities for video frame analysis• Designed and implemented self-evaluation and adaptive planning features for recognition quality improvement
Jun 2023 - Jun 2023	AI Poet Large Language Models · Prompt Engineering · OpenAI · Web Services · Python <ul style="list-style-type: none">• Developed an AI-driven Discord chatbot integrated with large language models (LLM)• Implemented prompt engineering techniques using Chinese poetry elements to provide emotional support• Created real-time user interaction capabilities for understanding and responding to input• https://github.com/Luo-hongyi/AI-Poet
Oct 2022 – Dec 2022	Sky Route (Course Project) C++ · STL · Algorithms · Data Structures · Graph Theory · Data Analytics <ul style="list-style-type: none">• Developed an analysis program using OpenFlights.org data to identify key hub airports in specific regions• Implemented algorithms to calculate airport betweenness centrality, utilizing Dijkstra's and BFS algorithms• Applied software development life cycle (SDLC) principles throughout the project• https://github.com/Luo-hongyi/Sky-Route

EXTRACURRICULAR ACTIVITIES

Oct 2021 – Present	Leader, Plan P Music Studio <i>An officially registered society at the University at Illinois Urbana-Champaign</i> <ul style="list-style-type: none">• Demonstrated leadership by managing the university society, coordinating diverse projects and events• Applied project management skills to oversee music arrangement and performance preparation• Developed mentorship programs to enhance overall studio quality
Aug 2021 – Present	Music Arranger and Trombonist, Jasmine Field Orchestra <i>Chinese Students and Scholars Association at the University at Illinois Urbana-Champaign</i> <ul style="list-style-type: none">• Created musical arrangements to enhance individual and group performances• Performed as trombonist in orchestra concerts and events