



Chang Liu

EDUCATION AND TRAINING

Master of Science in Artificial Intelligence and Data Engineering

University of Pisa [01/03/2023 – 21/02/2025]

City: Pisa | Country: Italy | Website: <https://www.unipi.it/> | Final grade: 110/110 Cum Laude | Thesis: Evaluating Retrieval-Augmented Generation Systems on Edge Devices

- Data Mining and Machine Learning: Data preprocessing, feature selection, supervised & unsupervised learning, model evaluation;
- Multimedia Information Retrieval and Computer Vision: Text-based search engine development in Java, query processing, index compression, and efficient search algorithms;
- Computational Intelligence and Deep Learning: Implementation of deep learning architectures (CNN, RNN, and Transformers) using Python and MATLAB, evolutionary and genetic optimization techniques, and model performance evaluation;
- Formal Methods for Secure Systems: Cyber-Physical Systems (CPS) evaluation using INTO-CPS, theorem proving with PVS, and malware analysis techniques;
- Cloud Computing: Distributed data processing with Hadoop in Java, containerization with Docker, orchestration with Kubernetes, and virtualization techniques;
- Internet of Things: Sensor networks, embedded systems, edge computing, IoT security, and real-time data processing;
- Large-Scale and Multi-Structured Databases: NoSQL database management with Java, including MongoDB (document database), Redis (key-value database), and Neo4j (graph database);
- Mobile and Social Sensing Systems: Mobile application development using Kotlin, sensor data acquisition (accelerometer, gyroscope, GPS), real-time data processing.
- Symbolic and Evolutionary AI: Extension of the Simplex algorithm to non-Archimedean numbers using Julia.

Bachelor Degree in Computer Engineering

University of Pisa [01/09/2020 – 17/02/2023]

City: Pisa | Country: Italy | Website: <https://www.unipi.it/> | Final grade: 109/110 | Thesis: Approcci Spiegabili basati su alberi decisionali multiclasse per il riconoscimento dei flussi di mobilità urbana

- Electronic Computing Systems: Manual conversion of C code to 64-bit assembly, Linux OS extension by adding new primitives to enhance functionalities, system-level programming, and kernel modification;
- Web Programming: Full-stack web development with PHP (backend), HTML, CSS, and JavaScript (frontend), including user interface design and server-side logic implementation;
- Logical Networks: Assembly programming, digital circuit description and synthesis using Iverilog, and hardware design for logic systems;
- Computer Networks: Socket programming in C, network communication protocols, and implementation of client-server architectures.
- Databases: Database management with MySQL, development of stored procedures, execution of complex queries for data analysis.

High School Diploma in IT

ITIS G. Marconi [10/09/2015 – 10/07/2020]

City: Pontedera | Country: Italy | Website: <https://www.marconipontedera.edu.it/> | Final grade: 90/100

LANGUAGE SKILLS

Mother tongue(s): Italian | Chinese

Other language(s):

English

LISTENING B2 **READING** B2 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Microsoft Office / Programming Languages - C,C++,Java,HTML and MS SQL server / linguaggi di programmazione c, java,python / programming: Python, MATLAB and SQL

DRIVING LICENCE

Driving Licence: AM

Driving Licence: B