Ruize Tang

Beijing, China | tangruize127@gmail.com

EDUCATION

Beijing University of Technology, Beijing, China Sep 2023 – Jul 2027

Bachelor's degree in Computer Science and Technology, College of Computer Science.

GPA: 3.31/4.0; weighted average: 81.04/100; arithmetic average: 83.20/100.

Selected coursework (grade/100): Data Mining (98); Big Data Management and Analytics (92); Course Design of Data Structures I (91); Introduction to Distributed Systems (90); Comprehensive Course Design of Computer Network (90); Probability and Statistics (Engineering) (85).

SELECTED MODELLING COMPETITIONS

Mathematical Contest in Modeling (MCM) — Team Leader 2026

- Led a three-member team estimating unobservable audience votes for Dancing with the Stars from 34 seasons of scoring and elimination records; used ensemble regression and constrained Monte Carlo methods to produce estimates consistent with observed outcomes.
- Replayed ranking, percentage and judges' save scoring rules; interpreted XGBoost results with SHAP and tested sensitivity to perturbations.

China Undergraduate Mathematical Contest in Modeling (CUMCM) — Team Member 2025

- Analysed NIPT timing by modelling Y-chromosome concentration against gestational age and BMI, including recommended testing windows for male fetuses.
- Built composite indicators using random-forest feature importance, clustered cases with K-means and translated clusters into interpretable BMI intervals; ran 1,000 Monte Carlo error simulations and compared random forest, logistic regression and decision trees for female-fetus anomaly detection.

INTERNSHIPS

Architectural Design and Research Institute Co., Ltd., Chinese Academy of Sciences — Beijing Jan–Mar 2026

Algorithm Engineer Intern, Institute of Digital Technology and Intelligent Applications

- Built a Python prototype for FAST radio-telescope wind analysis across multiple devices. Estimated sampling rates from median timestamp intervals, converted 16-sector direction codes, accounted for wind-from direction, and resolved velocities into along-wind and cross-wind components.
- Removed component means and applied Welch's method to estimate power spectral densities; produced per-device plots as a reference for a subsequent Java/JTransforms implementation.

Institute of Computing Technology, Chinese Academy of Sciences — Beijing Jan–Feb; Aug–Sep 2025

Machine Learning / NLP Intern, Key Laboratory of Network Data Science and Technology

- Implemented an IMDb sentiment-classification network from scratch in NumPy: up to 5,000 TF-IDF features and a 5,000–256–2 architecture, with ReLU, softmax, cross-entropy and backpropagation.
- Surveyed 10 LLMs and five AI programming products; deployed OpenHands v0.54.0 in Linux/Docker and connected an open-source coding model through ModelScope's OpenAI-compatible API.
- Diagnosed dataset-access, Pydantic, Docker-daemon and image-build failures from logs and tracebacks; brought the runtime to Ready and launched the first SWE-bench Verified evaluation instance.

PROFESSIONAL TRAINING

Nanjing Tuersi Intelligent Systems Co., Ltd. — Nanjing Jul–Aug 2026

AI Generative Software Development Programme, Cohort 2607 — Programme Participant

- Practised structured prompting, requirements decomposition, modular development, code review and iterative testing; used Chat, Copilot and Agent modes to work through requirements, specifications, design, code and testing. Completed the programme assignments; assessment: Qualified.

SELECTED PROJECTS

Campus Task Hub — WeChat Mini Program; Team Lead and Lead Front-End Developer Jul 2026

- Led client development in a six-member software-engineering course team. Implemented login, task listings and posts, orders, chat, wallet, reviews, profile management and real-name verification.
- Integrated Spring Boot REST APIs through a shared request layer with JWT authentication, error handling, login/verification redirects and multi-environment configuration; authored and ran approximately 70 manual test cases and prepared interface documentation and API design review materials.
- Source: github.com/bendanaho/campus_task_hub (miniprogram branch).

Multi-Sensor Environmental Monitoring System — Zynq FPGA/ARM Course Project Mar–Jul 2026

- Completed the technical implementation in a three-person course group. Built a Zynq SoC system reading ZE08-CH2O formaldehyde, ZH03B particulate matter and DHT11 temperature sensors, with synchronous OLED, Bluetooth and local-web displays.
- Implemented a custom AXI IP with AXI4-Lite registers, AXI UARTLite Bluetooth communication, sensor-frame parsing and CRC-8 checks; added text/JSON output and a shared data hub.
- Designed WARMUP/OK/STALE/ERROR/INVALID data-quality states and a 5,000 ms staleness rule; delivered a complete hardware-to-display demonstration and architecture documentation.

Graph and Sorting Algorithm Visualiser — Data Structures Course Design Autumn 2025

- Built an independent Python 3.11/PyQt5 MVC application with one GraphModel synchronising graphical, adjacency-matrix and adjacency-list views; supported directed/undirected and weighted/unweighted graphs and completed 21 functional and boundary tests.
- Visualised DFS, BFS, Dijkstra, Prim and Kruskal, plus seven sorting algorithms; separated algorithm steps from UI refresh with generators and QTimer, and added a graph DSL, .gviz save/load and LLM-assisted generation.

Xinmeng Zhiyin — LLM Workflow for Dream Text and Emotional Expression; Team Leader 2025

- Led a three-member team designing a Baidu Qianfan workflow that analyses dream narratives and generates responses through prompt design and workflow-agent configuration.

AWARDS AND HONOURS

Meritorious Winner, Mathematical Contest in Modeling (MCM/ICM) 2026, COMAP — Team 2615257.

Second Prize, Beijing Division, Undergraduate Group, China Undergraduate Mathematical Contest in Modeling (CUMCM) 2025.

Second Prize, General Track, Beijing Division, Undergraduate Group, National Artificial Intelligence Application Innovation Competition 2025, Chinese Society of Technology Economics.

TECHNICAL SKILLS

Programming: Python, Java, C/C++, SQL, JavaScript, Verilog/SystemVerilog.

Data and machine learning: NumPy, pandas, SciPy, scikit-learn, TF-IDF, Matplotlib.

Software: Spring Boot, REST APIs, WeChat Mini Program (WXML/WXSS), HTML/CSS, JWT, Maven, Git/GitHub, PyQt5, Jupyter Notebook, VS Code, IntelliJ IDEA, PyCharm.

Systems and databases: Linux, Docker, Zynq SoC, Vivado, Vitis, AXI4-Lite, AXI UARTLite, UART, OLED, HC-05 Bluetooth, MySQL, H2.

ENGLISH

IELTS: 7.0 overall.