

Ruida Liu

B.S. CANDIDATE, COMPUTATIONAL MATHEMATICS & CYBERNETICS

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Research Interests

Natural Language Processing · AI Agents · Controllable & Trustworthy AI · AI for Medical Image & Signal Analysis · Multimodal Learning

Education

Lomonosov Moscow State University, Moscow, Russia

B.Sc. in Computational Mathematics and Cybernetics

Sep. 2023 – Jul. 2027 (expected)

QS #94 | GPA 3.4 / 4.0

Shenzhen MSU-BIT University (SMBU), Shenzhen, China

B.Sc. in Computational Mathematics and Cybernetics (joint degree)

Sep. 2023 – Jul. 2027 (expected)

Shanghai #106 | GPA 3.4 / 4.0

- Coursework: Mathematical Analysis, Linear Algebra, Probability & Statistics, Discrete Mathematics, Algorithms & Data Structures, Machine Learning, Computer Networks, Operating Systems.

Publications

* indicates equal contribution. **Bold** denotes the author of this CV.

[1] Learning Class-Conditional Temperature with Entropy Alignment for Medical Image Classification

ICASSP 2026 · IEEE International Conference on Acoustics, Speech and Signal Processing · CCF-B

W. Pan*, **R. Liu***, et al. *Co-first author*

Proposes CCT-EAL, a loss function integrating class-conditional temperature scaling with entropy alignment to jointly address domain gap and class imbalance in medical image classification; validated on 5 public benchmarks across multiple backbones.

[2] AIRhealth: An AIoT AR-Glasses Framework for Multimodal Dietary Recognition and Personalized Nutrition Management

IEEE CloudCom 2025 · Core-C · Oral Presentation

R. Liu, et al. *First author*

Builds the first end-to-end AR glasses system for dietary health, unifying YOLO detection, Qwen2.5-VL (LoRA fine-tuned), and IoT edge-cloud collaboration; achieves 70.17% dish recognition and 90.42% gesture detection accuracy.

[3] A Cloud-Edge Collaborative Framework for Autonomous UAV-based Medical Logistics

IEEE CloudCom 2025 · Oral Presentation

M. Zhao, **R. Liu**, J. Zhao, H. Gao, R. Zeng *Second author*

[4] SM-CBNet: A Speech-Based Parkinson's Disease Diagnosis Model

ICIC 2025 · CCF-C · Oral Presentation

X. Wang, W. Pan, **R. Liu**, K. Jin, Z. Tian *Third author*

[5] ECG-Expert-QA: A Benchmark for Evaluating Medical Large Language Models in Heart Disease Diagnosis

IEEE BIBM 2025 · CCF-B · GitHub Featured Repository

Authors, **R. Liu**, et al. *Fourth author*

[6] Emotion Recognition from Skeleton Data: A Comprehensive Survey

ACM Computing Surveys · Under Review (2025)

Authors, **R. Liu**, et al. *Fourth author*

Honors & Awards

IEEE Signal Processing Society – ICASSP 2026 Travel Grant (USD \$1,000)

Apr. 2026

One of only two recipients nationwide in China. Recommended by Prof. Jianjun Lei (NSFC Distinguished Young Scholar), IEEE SPS Beijing Chapter.

National First Prize – National University Student IoT Design Competition

Sep. 2025

Team Leader. Acceptance rate < 5%; Ministry-of-Education-recognized.

Other National Awards

- **National Third Prize**, Blue Bridge Cup Art Design Competition (Static Poster Track) – Team Leader May 2025

- **National Third Prize**, Global Campus AI Algorithm Elite Competition Jan. 2025
- **National Third Prize** ×2, National Student Digital Media Technology & Creative Competition Oct. 2025
- **Top 30% Nationwide**, CCF CAT National Algorithm Elite Competition – Team Leader May 2025

Other Honors

- **Provincial Second Prize** (Guangdong), Blue Bridge Cup Software Programming Competition, Python Group B Apr. 2025
- **Invention Patent**, First Inventor (Under Review) – video-based nutrition recognition Nov. 2025
- **Top-10 Outstanding Innovation Project**, Shenzhen MSU-BIT University – Project Leader 2024 – 2025
- **Academic Scholarship** (×2), Shenzhen MSU-BIT University 2023 – 2024

Research Experience

AI Institute, Shenzhen MSU-BIT University

Research Assistant – Center for Affective Intelligence & Ubiquitous Computing

May 2025 – Present

Advisor: [Prof. Runhao Zeng](#)

- Lead and co-author research on **medical image classification**, multimodal AI agents, and ECG-based medical LLM evaluation; first/co-first authorship on 2 of 6 papers within the first year.
- Independently completed the full research pipeline (idea → literature → experiment → writing → rebuttal) for the ICASSP 2026 paper on class-conditional temperature scaling.
- Maintain shared computing infrastructure (multi-GPU servers, conda environments, dataset pipelines) for the medical & affective intelligence sub-group.

Selected Projects

MaiLi – AI+AR Smart Glasses for Personal Nutrition

Team Leader · IoT Design Competition (National 1st Prize)

May 2025 – Sep. 2025

Featured by [Shenzhen TV](#)

- Designed and built a Raspberry-Pi-based wearable that recognizes meals via camera, computes nutritional content, and surfaces chronic-disease warnings on an AR optical-waveguide HUD.
- Stack: Qwen-VL multimodal LLM (cloud), YOLO segmentation, gesture recognition, bone-conduction audio I/O; cloud-edge synchronization with custom backend & database.
- Filed an invention patent (first inventor, under review) for the video-based dietary recognition pipeline.
- Invited to present at **Shenzhen Entrepreneurs Day** as a featured youth-innovation pitch; attracted strong interest from entrepreneurs and investors, with concrete investment-collaboration intent currently being advanced toward commercialization.

SMBU Student-Union Visual Identity

Original Designer ([official release](#))

2023

Adopted as the permanent emblem

- Designed the Student-Union emblem currently in continuous use; published in the official WeChat channel and adopted across school events.

Technical Skills

Languages	Python, C/C++, R, Bash, \LaTeX ; HTML/CSS/JavaScript
ML & AI	PyTorch, Hugging Face Transformers, LLM fine-tuning (LoRA / QLoRA), Multimodal Large Models (Qwen-VL), YOLO, Diffusion basics
Systems	Linux, Docker, conda, Git/GitHub; Raspberry Pi prototyping; Cloudflare Tunnel; SQLite
Design	Adobe Photoshop, Adobe Illustrator (graphic / poster / brand identity)
Spoken Languages	Mandarin (native), English (CET-6), Russian (CRT-4)

Service & Activities

- **Head of Design Department**, SMBU New Media Center – directed visual identity and event posters.
- **Core Member**, SMBU Computer Association & Mathematical Modeling Association – organized internal training and led teams to national competitions.
- **Admissions Assistant**, SMBU Office of Admissions (Sep. 2023 – Feb. 2024) – led campus presentations and managed applicant data.
- **Smart-Sports Promotion Intern**, Linyi Municipal Sports Bureau (Jun. – Aug. 2024) – back-end maintenance & data analysis for the city sports mini-program.

For up-to-date information, please visit liuruida.ai.