

# Xiangdong Hu

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## EDUCATION

### University of Georgia

*Ph.D. in Computer Science (Advisor: Prof. [Jian Liu](#)) | GPA: 0.00/4.00*

May 2026 - Present

### Georgia State University

*M.S. in Computer Science (Advisor: Prof. [Qin Hu](#)) | GPA: 4.00/4.00*

Jan 2025 - May 2026

### NingboTech University

*B.Eng. in Computer Science (Advisor: Prof. [Chaoyi Pang](#))*

Sep 2020 - Jun 2024

- Honors: Qiushi Class (Joint Program with Zhejiang University)

## RESEARCH EXPERIENCE

### Georgia State University, INSPIRE Lab

*Ph.D Student*

Jun 2025 - Present

#### Project: GAMBIT - Gamified Jailbreak Framework for Multimodal LLMs ([arXiv](#))

- Proposed a novel framework utilizing 'Puzzle-based Multimodal Encoding' to disrupt visual semantic filters and 'Gamified Scene Construction' to induce model compliance via cognitive flow.
- Identified and formalized the 'Safety-Complexity Trade-off' in Multimodal LLMs, demonstrating that high cognitive load tasks significantly suppress safety guardrails in reasoning models (e.g., GPT-o4-mini, Gemini 2.5 flash).
- Achieved state-of-the-art Attack Success Rates (ASR) on popular models, outperforming baselines.
- Work submitted to ACL 2026 conference.

#### Project: Straggler Mitigation in Blockchain-based Hierarchical Federated Learning ([arXiv](#))

- Proposed a decentralized BHFL framework utilizing a Raft-based consortium blockchain on edge servers to ensure a trusted computing environment and eliminate single-point failures..
- Designed 'HieAvg', a novel hierarchical averaging algorithm to mitigate straggler impacts by estimating missing weights via historical differences, theoretically proving convergence on non-IID data and non-convex loss functions.
- Optimized system latency by modeling the trade-off between blockchain consensus delays and global model convergence requirements; validated performance improvements on Raspberry Pi and AWS EC2 testbeds.
- Work submitted to IEEE Internet of Things Journal..

### Zhejiang Lab, Artificial Intelligence Research Institute

*Research Assistant Intern*

Sep 2023 - Dec 2023

- Contributed to a framework synthesizing full-body 3D anime characters from non-overlapped front and back views.
- Assisted in implementing a Direction-aware Attention Module to fuse features from dual viewpoints, resolving 'ghost face'.
- Processed 3D assets scraped from an open source community, generating renderings to establish our dataset.
- Work published to arXiv as: '[NOVA-3D](#): Non-overlapped Views for 3D Anime Character Reconstruction'.

## OPEN SOURCE PROJECTS

### PaperSeek: Agentic Research Assistant

*Creator & Maintainer ([Github](#))*

Nov 2025 - Present

- Designed a CLI-first, agentic research tool leveraging LLMs for intelligent literature summarization and auto-tagging.
- Implemented a multi-source retrieval pipeline (ArXiv, Semantic Scholar) with robust rate-limiting algorithms.

- Engineered structured prompting strategies to extract core innovations, achieving a 13.9x speedup in literature acquisition.

**Mobile Side-Channel Attack: Keystroke Inference**

Oct 2025 - Dec 2025

Developer ([Github](#))

- Investigated privacy leakage on smart devices by developing an Android application to collect high-frequency sensory data (accelerometer, gyroscope) for background recording.
- Designed and trained a hybrid CNN-GRU deep learning model to infer unshown passwords from motion sensor patterns, exploiting side-channel vulnerabilities.
- Analyzed spatial-temporal features of keystroke dynamics to achieve high prediction accuracy in experimental validations.

**TEACHING & PROFESSIONAL EXPERIENCE**

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**Georgia State University**

Jan 2025 - Present

Graduate Teaching Assistant

- Grader for CSC 6330 (Programming Language Concepts) & CSC 8230 (Secure and Private AI): Assessed graduate-level assignments and exams; authored original problem sets and code samples to reinforce core theoretical concepts.

**Georgia State University**

Jan 2026 - Present

Lab Instructor

- Lab Instructor for CSC 1302L (Principles of Computer Science II): Delivered weekly lab sessions to undergraduate students, demonstrating coding techniques and facilitating hands-on practice with Python and data structures.

**HONORS & AWARDS**

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| <ul style="list-style-type: none"><li><b>Graduation Honorary Certificate</b><br/><i>granted by Zhejiang University</i></li></ul>   | 2024 |
| <ul style="list-style-type: none"><li><b>Team Silver Medal, 8<sup>th</sup> China Group Programming Ladder Tournament</b><br/><i>granted by China Collegiate Computing Contest Committee</i></li></ul>          | 2023 |
| <ul style="list-style-type: none"><li><b>Team Bronze Medal, 7<sup>th</sup> China Group Programming Ladder Tournament</b><br/><i>granted by China Collegiate Computing Contest Committee</i></li></ul>          | 2022 |
| <ul style="list-style-type: none"><li><b>Bronze Medal, Zhejiang Provincial Collegiate Programming Contest</b><br/><i>granted by Zhejiang Provincial College Student Technology Contest Committee</i></li></ul> | 2023 |
| <ul style="list-style-type: none"><li><b>Bronze Medal, 47<sup>th</sup> ICPC Regional Contest (Nanjing Site)</b><br/><i>granted by International Collegiate Programming Contest Committee</i></li></ul>         | 2022 |
| <ul style="list-style-type: none"><li><b>Bronze Medal, 47<sup>th</sup> ICPC Regional Contest (Jinan Site)</b><br/><i>granted by International Collegiate Programming Contest Committee</i></li></ul>           | 2022 |
| <ul style="list-style-type: none"><li><b>Bronze Medal, 46<sup>th</sup> ICPC Regional Contest (Kunming Site)</b><br/><i>granted by International Collegiate Programming Contest Committee</i></li></ul>         | 2022 |
| <ul style="list-style-type: none"><li><b>Bronze Medal, China Collegiate Programming Contest, Weihai Site</b><br/><i>granted by China Collegiate Programming Contest Committee</i></li></ul>                    | 2022 |
| <ul style="list-style-type: none"><li><b>Bronze Medal, Zhejiang Provincial Collegiate Programming Contest</b><br/><i>granted by Zhejiang Provincial College Student Technology Contest Committee</i></li></ul> | 2022 |

**TECHNICAL SKILLS**

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**Languages:** Python, C/C++, Java, C#, SQL, JavaScript, HTML/CSS, LaTeX, R.

**AI & Machine Learning:** PyTorch, Hugging Face Transformers, LLM Agents, RAG, Prompt Engineering, Genetic Algorithms, OpenCV, Red Teaming.

**Graphics & 3D Vision:** ModernGL, OpenGL, Unity, NeRF, StyleGAN, 3D Reconstruction.

**Tools & Platforms:** Git, Docker, Linux/Bash, Flask, React, MySQL, AsyncIO.