

# WENJI BAI

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Tampere, Finland

Wenji Bai

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## EDUCATION

- 9/2024 – Present **PhD in Computer Science, Tampere University** Tampere, Finland  
Fully funded Doctoral Researcher, Finnish Center for Artificial Intelligence (FCAI), GPT-Lab. Supervised by Prof. Pekka Abrahamsson.
- 9/2021 – 6/2024 **M.S. in Computer Science, Hunan Normal University** Changsha, China  
Supervisor: Prof. Lianming Zhang. Published 3 papers in journals (IEEE TII, Information Sciences, JISA). GPA: 3.6/4.0, Rank: top 5%
- 9/2016 – 6/2020 **B.S. in Computer Science, Yangtze Normal University** Chongqing, China  
Rank: top 10%

## PUBLICATIONS

- 2026 **[Under Review] When Passing Tests Hides Vulnerabilities: An Empirical Study of Silent Failures in Agentic Systems.**  
Wenji Bai, Muhammad Waseem, Zeeshan Rasheed, Pekka Abrahamsson  
*Journal of Systems and Software*
- 2023 **TMANomaly: Time-Series Mutual Adversarial Networks for Industrial Anomaly Detection** link  
Lianming Zhang, Wenji Bai, Xiaowei Xie, Liying Chen, Pingping Dong  
*IEEE Transactions on Industrial Informatics*
- 2022 **MANomaly: Mutual adversarial networks for semi-supervised anomaly detection** link  
Lianming Zhang, Xiaowei Xie, Kai Xiao, Wenji Bai, Kui Liu, Pingping Dong  
*Information Sciences*
- 2023 **A data-driven network intrusion detection system using feature selection and deep learning** link  
Lianming Zhang, Kui Liu, Xiaowei Xie, Wenji Bai, Baolin Wu, Pingping Dong  
*Journal of Information Security and Applications*

## EXPERIENCE

- 9/2024 – Present **Doctoral Researcher, Tampere University / FCAI** Tampere, Finland  
Supervisor: Prof. Pekka Abrahamsson, GPT-Lab Research Group.
- Researching silent failures in LLM-based multi-agent code repair, with a focus on cases where generated patches pass functional tests but remain security-vulnerable.
  - Developed an empirically grounded taxonomy through three iterative waves of qualitative coding, classifying failures by type, originator role, pipeline stage, and code location.
  - First-authored a paper currently under review at the *Journal of Systems and Software (JSS)*.
- 9/2021 – 06/2024 **M.S. Researcher, Hunan Normal University** Changsha, China  
Supervisor: Prof. Lianming Zhang
- Conducted research on time-series anomaly detection and network intrusion detection using deep learning and adversarial learning methods.
  - Contributed to three journal publications in *IEEE Transactions on Industrial Informatics*, *Information Sciences*, and *Journal of Information Security and Applications*.
- 10/2023 – 3/2024 **Gameplay Programmer Intern, Ubisoft Shanghai** Shanghai, China
- Developed an unannounced 2D line-based game project using C++.
  - Designed a game structure with separated data, logic, and display layers, using breadth-first search for UI construction.
- C++ / Game Programming
- 6/2023 – 8/2023 **Machine Learning Engineer Intern, Contemporary Amperex Technology Co., Limited** Ningde, China
- Designed LLM-based model architectures for office automation systems, including dialogue systems and search engines.
  - Deployed, trained, and fine-tuned LLaMA, LLaMA2, and ChatGLM models for task-specific applications.
- Python / Pytorch / LLM / Machine Learning

5/2018 – 11/2018

**Research Assistant, Yangtze Normal University**

Chongqing, China

Supervisor: Prof. Keke Shang

Worked on a data-driven weather forecasting project using machine learning methods for predictive modeling.

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**PROJECTS**

7/2022 – 6/2023

**Anomaly Detection on Time-Series Data in Industrial Internet of Things (IIoT) Systems Using Deep Learning Model**

- Developed a reconstruction model to detect anomalies in time-series data using Generative Adversarial Networks (GANs) and Mutual Adversarial Networks.
- Achieved a 99.75% precision rate in industrial anomaly detection experiments.
- Contributed to coding, data preprocessing, model architecture design, training, and paper writing.  
Python / Pytorch / GAN / Adversarial Machine Learning

10/2021 – 3/2022

**A Data-Driven Network Intrusion Detection System Using Feature Selection and Deep Learning**

- Developed FS-DL, a data-driven Network Intrusion Detection System (NIDS) using feature selection and deep learning to improve data quality and detection accuracy.
- Led data processing and deep learning model design, and deployed the system in a Software-Defined Networking (SDN) controller for online detection of abnormal traffic.  
Python / Pytorch / SDN

1/2022

**GGJ2022 Pixel Art RPG Puzzle Game Project - "The Gift"**

- Led the team in planning, development, and music production, and released the game with over 100 downloads.
- Designed the core gameplay mechanics and level progression system.  
C / C++ / 2D Game

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**AWARDS**

**1st Place, Youth Participation Idea Competition**, Tampere, Finland, 2026.

**DEVELOP AT UBISOFT Programming**, Ubisoft Shanghai, 2024.

**National Scholarship**, Hunan Normal University, 2023.

**Provincial Third Prize in Hunan Mathematical Modeling Competition**, Hunan Normal University, 2023.

**The First Prize Scholarship**, Hunan Normal University, 2022.

**Merit Student**, Hunan Normal University, 2022.

**Software Designer Certification**, Yangtze Normal University, 2018.

**The First Prize Scholarship**, Yangtze Normal University, 2017.

**Merit Student**, Yangtze Normal University, 2017.

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**TEACHING EXPERIENCE**

**Teaching Assistant**, *Computer Organization and Principles; Computer Networks*

Fall 2018

**Teaching Assistant**, *Operating Systems; Database Systems*

Fall 2018

**Mentor**, *Codementor*

Fall 2021

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**SERVICE**

**2022 World Computing Conference, Changsha, China**, Facilitator.

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**PRESENTATIONS**

**AI-DOC Annual Event**, Poster Presentations, Helsinki, Finland, 2024–2025.

**IEEE Global Communications Conference**, Kuala Lumpur, Malaysia, 2023.

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**SKILLS**

**Programming:** Python, C++, C, Java, SQL, R.

**Research Areas:** LLM-based agents, AI reliability, software security, empirical software engineering.

**ML / AI:** PyTorch, LLM fine-tuning, deep learning, anomaly detection.

**Tools:** Docker, Git, MySQL, Oracle, MATLAB, Godot.

**Additional Skills:** Game design, team leadership.

**Languages:** Chinese (native), English.