

Weihe (Nick) Gao

nickwgao@gmail.com
github.com/gaoweihe
linkedin.com/in/gaoweihe

EDUCATION

Tsinghua University

MSc of Computer Science

Beijing, China

Sep. 2021 - July 2024

- Courses: Data Security, Blockchains, Distributed Systems, Advanced Networking
- Thesis: Scalability in Heterogeneous Distributed Systems Consensus

Lancaster University

BSc of Computer Science (Honors Degree)

United Kingdom

Sep. 2017 - Jun. 2021

- Academic Dean's List
- Research: Embedded systems, Sensor networks, Industrial IoT protocols
- Courses: Digital Systems, Operating Systems, Distributed Systems

Beijing Jiaotong University

BEng of Computer Science and Technology

Beijing, China

Sep. 2017 - Jun. 2021

- Honorable Mention, Interdisciplinary Contest In Modeling (ICM2019)
- Thesis: Inter-connectivity of Smart Cities Lighting Systems

RESEARCH

Directions:

Real-time Sensor Networks, Industrial Internet-of-Things, Consensus and Protocols, Security and Privacy, Scheduling and Predictability

Publications:

- [1] Hu, Bingyi, **Weihe Gao**, Cuiping Yan, Yongjun Ni, and Chenqian Li. "Image-based Deflection Measurement and Error Analysis." In Journal of Physics: Conference Series, vol. 1626, no. 1, p. 012024. IOP Publishing, 2020.
- [2] Hu, Bingyi, Ke Xing, **Weihe Gao**, Hainan Liu, and Hengyong Li. "Modeling and Implementation of Distributed Rain Water Storage and Utilization." In Journal of Physics: Conference Series, vol. 1624, no. 2, p. 022004. IOP Publishing, 2020.
- [3] Wang, Xuheng, Jiaying Song, Xu Zhang, Junshu Tang, **Weihe Gao**, and Qingwei Lin. "LogOnline: A Semi-Supervised Log-Based Anomaly Detector Aided with Online Learning Mechanism." In 2023 38th IEEE/ACM International Conference on Automated Software Engineering (ASE), pp. 141-152. IEEE, 2023.

Projects:

- Predictable LLM Serving API Schedulers (2024)
 - LLM output prediction with few-shot learning and fine-tuning
 - Scheduling based on LLM serving predictions
- DChain: Scaling Blockchains through Trust-Minimized Computing Delegation (2023)
 - Reduced compute complexity of decentralized consensus protocols
 - Leveraged threshold cryptography for identity representations
- Secure Storage and Communication Systems (2022)
 - Designed secure RPC framework based on trusted hardware (such as Intel SGX)
 - Implemented high performance data transfer over kernel bypass RPC
- Internet-Based Utility Tunnel Information Exchange and Decision Support System (2021)
 - Implementation of city-scale monitoring system
 - SW & HW co-design, PCB design, RTOS

- Application Systems of Internet Plus Micro-circulation Mode Sponge City (2021)
 - Environmental modeling, Distributed sensing and control
- Geological Disaster Data Visualization and Dynamic Display of Disaster Formation Process Based on WebGL Technology (2020)
 - Data capturing and reconstruction
 - Hazard visualization
- Integrating Key Technologies of Green Prefabricated Steel Structural Buildings (2020)
 - Data capturing and reconstruction, Hazard visualization

PATENTS

- [1] Trustable Data Analytical Cluster Scheduling Method based on Trusted Execution Environments, CN117931394A, Apr. 26, 2024.
- [2] Bridge Bearing State Monitoring Device, CN202220687509.8, Jul. 29, 2022.
- [3] A Bridge Bearing State Monitoring Device and Method, CN202210312790.1, May 20, 2022
- [4] Bridge Bearing Data Acquisition Device, CN202130879061.0, May 5, 2022.
- [5] Bridge Bearing Inclination and Vibration Testing Instrument, CN202030653807.1, Aug. 27, 2021
- [6] A Device for Personnel Detection in an Intelligent Home Privacy Space, CN 2020 2 0798927.5, Nov. 13, 2020.
- [7] Signal Acquisition and Output Circuit and Device, CN ZL 2019 2 1598628.0, Sep. 24, 2019.
- [8] Communication Conversion Circuit and Conversion Device, CN ZL 2019 2 1587430.2, Sep. 23, 2019.
- [9] An Image Analysis-Based Spot Position Detection Sensor, CN ZL 2019 2 0427925.2, Apr. 1, 2019.
- [10] Expandable Folding Seat for Sleeping Carriage Aisles, CN201620794058.2, Dec. 21, 2016.

INTERNSHIPS & RESPONSIBILITIES

C++ Development Intern (security and privacy) Beijing, China
Beijing Yeez Technology Co., Ltd. May 2023 - Apr. 2024

- TEE-based confidential computing platform (C / C++ / Rust)
- Fidelius: blockchain platform tailored for confidential computing (C / C++ / Solidity)
- Invited talks on TEE prototypes (SGX / TDX / SEV / TrustZone / Keystone)

Chairman, Founder Beijing Jiaotong University
SEAL International Innovation Club Apr. 2019 - Mar. 2021

- Aim: international scientific collaboration
- Scientific events organization, fund raising

Head of Public Engagement Beijing Jiaotong University
Student Union Oct. 2017 - Dec. 2019

- Responsibilities: public engagements (especially with international organizations)
- Fund raising with merchants and enterprises

REFERENCES

Prof. Fahad Dogar <i>Associate Professor</i>	Tufts University <i>fahad@cs.tufts.edu</i>
Prof. Yingdi Shan <i>Assistant Research Professor</i>	Tsinghua University <i>shanyd@tsinghua.edu.cn</i>
Prof. Bingyi Hu <i>Associate Professor</i>	Beijing Jiaotong University <i>hby@bjtu.edu.cn</i>