

Songlin Jiang

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🐦 HollowM186 • 💬 HollowMan6 • Last updated on November 2, 2025

As a **doctoral researcher**, my focus is on improving Reinforcement Learning & Large Language Models (LLMs) training and inference latency on High-Performance Computing (HPC) clusters & edge devices. Besides, I find immense joy in pushing my boundaries by tackling complex issues that have the potential to positively impact the public. My fervor converges with enhancing **computer systems**, **networks**, **databases**, and their corresponding **security** aspects, which allows me to have impacts on computing for both the environment (**greener while efficient**) and people (**faster while reliable**). I am also a passionate **free software developer**, I maintain several open-source projects and contribute to many others.

Education

Ph.D. in Computer Science and Technology, Aalto University 08/2024 – 07/2028

- Specialization: **Machine Learning Systems & Databases**
- Funding: **Efficient Deep Neural Network Computation with Resource-Constrained Devices (DNN ReCoDe)**
- Supervisor: **Prof. Mario Di Francesco**, Thesis Advisor: **Prof. Bo Zhao**
- Teaching Assistant: 2025 - now, Cloud Software and Systems D. **CS-E4190**
- Teaching Assistant: 2024, Scalable Systems and Data Management D. **CS-E4780**

M.Sc. Eng. in SECCLO Erasmus Mundus, Tech. Uni. of Denmark (DTU) (11.36/12) 08/2023 – 06/2024

- Specialization: **Reliable Distributed Systems**
- Thesis: **Real-Time GPU Usage Alert Service for Pre-Exascale HPC Clusters**
- Supervisor: **Prof. Bernd Dammann**

M.Sc. (Tech.) (Honor) in SECCLO Erasmus Mundus, Aalto University (5/5) 08/2022 – 07/2024

- Specialization: **Security and Cloud Computing**
- Thesis: **Real-Time GPU Usage Alert Service for Pre-Exascale HPC Clusters**
- Supervisor: **Prof. Bo Zhao**

No Degree (Exchange Abroad), University of Leeds (Pass, no grade due to COVID-19) 01/2020 – 06/2020

- Host: **School of Computer Science**

B.Eng. in Computer Science & Technology (Honor), Lanzhou University (91/100) 09/2018 – 06/2022

- Specialization: **Specialized Class for Fundamentals and Theories of Computer Science**
- Thesis: **A Short-Term Wind Speed Multistep-Ahead Hybrid Prediction Model based on ICEEMDAN and Prophet-GRU-NN**
- Supervisor: **Prof. Chao Ren**

Experience

Reinforcement Learning Infrastructure Engineer, Fellow (world's first agentic browser) 08/2025 – 10/2025

- Building infrastructures for Agentic RL training of Vision Language Models (VLMs) on top of **verl**
- **Verl** is **Volcano Engine & ByteDance Seed**'s Reinforcement Learning framework for LLMs

Reinforcement Learning Algorithm Engineer, xDAN AI (Agentic RL training with verl) 04/2025 – 08/2025

- Developing solutions for Agentic LLMs training using reinforcement learning
- Targeting areas include **coding**, **math**, **finance**, **deep researcher**, and **RAG enhancement**

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|--|-------------------|
| AI Prompt Engineer, Outlier (create RLHF datasets for code generation) | 01/2025 |
| ○ Crafting and answering questions related to computer science in order to help train AI models | |
| ○ Evaluating and ranking code generated by AI models | |
| OSPP Summer, OceanBase (add support for the IVFPQ vector index algorithm) | 06/2024 – 10/2024 |
| ○ Enable more vector indexing capabilities for OceanBase – a multi-cloud distributed SQL database | |
| ○ OceanBase is developed by Ant Group (Alibaba), supports the peak traffic in Double 11 Shopping Festivals | |
| Mentor for Google Summer of Code 2024, MIT CSAIL & OpenSUSE (simultaneously) | 05/2024 – 09/2024 |
| ○ Mentor Chang Min Bark for Updating the Multi-select Plugin in Blockly and Cross-testing Other Plugins | |
| ○ Mentor Jiamin Wang for Refactor Customize IBus with Modern Interface and Extensibility | |
| Junior Application Specialist, CSC - IT Center for Science (master's thesis) | 01/2024 – 07/2024 |
| ○ Implement the real-time GPU usage alert service for HPC clusters | |
| ○ Deploy Large Language Models (LLM) inference service in HPC environment with vLLM | |
| Founder, Hollow Software (company registered and established in Finland, business ID: 3369577-7) | 06/2023 – Present |
| ○ Freelance for full-stack computer programming tasks | |
| Developer Relations Engineer, Enclave (confidential computing, with Prof. Sebastian Gajek) | 06/2023 – 05/2024 |
| ○ Create technical documentation , tutorials and content | |
| ○ Manage channel to interact with the community and grow the customer base | |
| Coding Experience 2023 I & II, Igalia (Wolvic , ex. Mozilla Firefox Reality) | 06/2023 – 12/2023 |
| ○ Develop VR Browser , refactor Android deprecated methods | |
| ○ Address user issues. Implement UI, graphics, browser, and openXR related features | |
| ○ Contribute to the majority of the features available from v1.4.2 – v1.6 | |
| HPC Developer Internship, CSC - IT Center for Science | 05/2023 – 08/2023 |
| ○ Develop the GPU monitoring service for HPC clusters (NVIDIA and AMD GPUs, including LUMI) | |
| ○ Develop the Documentation GPT chatbot service using llamaIndex , LangChain and Redis/Qdrant | |
| ○ Make improvements to the HPC web operating interface project Open OnDemand using Ruby on Rails | |
| ○ LUMI ranked 3rd around the world and 1st in Europe at HPC supercomputer TOP500 list by 06/2023 | |
| CNCF LFX Mentorship, Kubescape (Kubernetes security platform) | 03/2023 – 05/2023 |
| ○ Add packaging support for various package managers in Linux , macOS , and Windows | |
| ○ Improve release CI by adding ARM64 binaries building and testing support (QEMU and cross compiling) | |
| ○ Add support for Kubescape auto version bumping in other Kubescape-related repositories | |
| ○ Enable Kubescape GitHub action to support code review based on generated SARIF report | |
| ○ A blog post by Cloud Native Computing Foundation (CNCF) that introduces my work | |
| Rhino-Bird Open-Source Training Program, Tencent (Kona JDK) | 07/2022 – 09/2022 |
| ○ Investigate keypairs generation for SM2 with JDK , compare performance and security of algorithms | |
| Google Summer of Code, MIT CSAIL & Google (Blockly , web-based visual program editor) | 05/2022 – 09/2022 |
| ○ Create a plugin to allow selecting, dragging and manipulating multiple blocks at once for Google Blockly | |
| ○ Resolve the issue that had troubled the Google Engineers for a decade (since the Blockly project started) | |
| ○ @mit-app-inventor/blockly-plugin-workspace-multiselect now has an average of 250+ downloads per week | |
| Summer of Bitcoin, Cryptoanarchy Debian (Bitcoin related Debian packages) | 05/2022 – 08/2022 |

- Add Continuous Integration (CI) by investigating **systemd** support inside Docker with GitHub Actions
 - The chance to get into this internship in 2022: **83/20317**
- RL Open Source Fest, Microsoft Research NYC** ([Vowpal Wabbit](#), ML library) 05/2022 – 08/2022
- Add native CSV parser support for the Vowpal Wabbit project in C++, **100%** Test & Code Coverage
 - Manage to make **10x performance improvement** and is comparable to speed of original VW text format
- Open Source Internship, Institute of Software, CAS** ([openEuler](#), Linux distribution) 01/2022 – 07/2022
- First to obtain 150 intern credits. Help solve 6 issues, related technologies include **D-Bus**, **Glib**, building Cloud Native **Container** images, **Rust** programming, **Chrome DevTools Protocol**, test case, **RPM** packaging
 - One of the achievements **mdbook-pdf** now has an average of **500+** downloads per week
- Google Summer of Code, openSUSE** ([IBus](#), input method framework) 06/2021 – 08/2021
- Add customizing themes feature for IBus in desktop environments, improve IBus settings support in GNOME
 - A [blog post](#) at **openSUSE News** that introduces my work
 - **GNOME extension** [Customize IBus](#) now has an average of **300+** downloads per week
- OSPP Summer, openEuler** (Developed an ISO writer using QT and C++) 07/2021 – 09/2021
- OSPP Summer, Emacs Application Framework** ([EAF](#), work with [Yong Wang](#)) 07/2020 – 09/2020
- Add new features and address all kinds of issues using **Emacs Lisp**, **Python**, **JavaScript**, **SQLite**
 - A [blog post \(in Chinese\)](#) about my work posted by Yong Wang (ManateeLazyCat)
- Summer of Code, Alibaba** ([Arthas](#), Alibaba's [most starred](#) project on GitHub, Java diagnostic tool) 07/2020 – 08/2020
- Create Chinese and English interactive online tutorials for Arthas using **Katacoda** and **Vue.js**
 - **Coding part highlight:** Support directly searching Class Loader by name instead of Hash Code in Java
 - A [Wechat post \(in Chinese\)](#) about my work posted by [hengyunabc](#)
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- ## Open Source Repositories
- 1.6k GitHub followers. 129.8k GitHub stars across all of the following selected repositories:
- | | | |
|---|---|------|
| 1. deepspeedai/DeepSpeed | ★40.6k <i>Training Framework</i> | 2025 |
| Rank #41 among all contributors with 12 commits, 119 lines of additions and 76 lines of deletions | | |
| 2. zhuzilin/ring-flash-attention | ★904 <i>Ring Attention</i> | 2025 |
| Rank #3 among all contributors with 4 commits, 124 lines of additions and 23 lines of deletions | | |
| 3. volcengine/verl | ★15k <i>RLHF Framework</i> | 2025 |
| Rank #7 among all contributors with 45 commits, 1714 lines of additions and 1342 lines of deletions | | |
| 4. OpenRLHF/OpenRLHF | ★8.3k <i>RLHF Framework</i> | 2024 |
| Rank #5 among all contributors with 33 commits, 531 lines of additions and 199 lines of deletions | | |
| 5. kubescape/kubescape | ★11k <i>Kubernetes Security Platform</i> | 2023 |
| Rank #9 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions | | |
| 6. Igalia/wolvic | ★911 <i>Immersive VR Browser</i> | 2023 |
| 7. VowpalWabbit/vowpal_wabbit | ★8.6k <i>Machine Learning System</i> | 2022 |
| Rank #59 among all contributors with 8 commits, 0 lines of additions and 0 lines of deletions | | |
| 8. rust-headless-chrome/rust-headless-chrome | ★2.8k <i>Chrome DevTools Protocol in Rust</i> | 2022 |
| Rank #12 among all contributors with 7 commits, 87 lines of additions and 12 lines of deletions | | |
| 9. ThibaultJanBeyer/DragSelect | ★765 <i>Multi-Select UI Library</i> | 2022 |
| Rank #7 among all contributors with 3 commits, 213 lines of additions and 23 lines of deletions | | |
| 10. debian-cryptoanarchy/cryptoanarchy-deb-repo-builder | ★143 <i>Bitcoin Packages for Debian</i> | 2022 |
| Rank #3 among all contributors with 7 commits, 245 lines of additions and 22 lines of deletions | | |

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|---|--|------|
| 11. HollowMan6/mdbook-pdf | ★193 MdBook backend for PDF Generation | 2022 |
| | Rank #1 among all contributors with 61 commits, 3515 lines of additions and 742 lines of deletions | |
| 12. mit-cml/workspace-multiselect | ★14 Blockly Multi-Select Plugin | 2022 |
| | Rank #1 among all contributors with 50 commits, 18358 lines of additions and 25270 lines of deletions | |
| 13. openSUSE/Customize-IBus | ★78 Full Customization of IBus UI | 2021 |
| | Rank #1 among all contributors with 371 commits, 53904 lines of additions and 40932 lines of deletions | |
| 14. HollowMan6/Wechat-Timed-Message | ★23 GitHub action for WeChat Message | 2021 |
| | Rank #1 among all contributors with 99 commits, 4139 lines of additions and 1718 lines of deletions | |
| 15. openSUSE/IBus-Theme-Hub | ★32 IBus Themes CSS Hub | 2021 |
| | Rank #1 among all contributors with 21 commits, 3190 lines of additions and 442 lines of deletions | |
| 16. openSUSE/IBus-Theme-Tools | ★22 IBus Theme Generator | 2021 |
| | Rank #1 among all contributors with 104 commits, 8558 lines of additions and 4654 lines of deletions | |
| 17. alibaba/arthas | ★36.8k Java Diagnostic Tool | 2020 |
| | Rank #2 among all contributors with 80 commits, 25191 lines of additions and 1543 lines of deletions | |
| 18. emacs-eaf/emacs-application-framework | ★3.4k Emacs Application Framework | 2020 |
| | Rank #5 among all contributors with 49 commits, 3482 lines of additions and 1033 lines of deletions | |
| 19. HollowMan6/TinyML-ESP32 | ★180 TinyML Programs for ESP32 | 2020 |
| | Rank #1 among all contributors with 11 commits, 78393 lines of additions and 19530 lines of deletions | |
| 20. HollowMan6/SRMD-Pytorch | ★26 Super Resolution Model | 2020 |
| | Rank #1 among all contributors with 23 commits, 21397 lines of additions and 1399 lines of deletions | |

Publications [Google Scholar, 213 citations with h-index of 1]

2025.....

1. *OpenRLHF: An Easy-to-use, Scalable and High-performance RLHF Framework*
Jian Hu, Xibin Wu, Wei Shen, Jason Klein Liu, Zilin Zhu, Weixun Wang, **Songlin Jiang**, Haoran Wang, Hao Chen, Bin Chen, Weikai Fang, Xianyu, Yu Cao, Haotian Xu, and Yiming Liu
Conference on Empirical Methods in Natural Language Processing (EMNLP) System Demonstrations 2025
2. *QUASAR: Quantum Assembly Code Generation Using Tool-Augmented LLMs via Agentic RL*
Cong Yu, Valter Uotila, Shilong Deng, Qingyuan Wu, Tuo Shi, **Songlin Jiang**, Lei You, and Bo Zhao
arXiv preprint arXiv:2510.00967 2025

2019.....

3. *Voting System Based on Wechat Pay*
Songlin Jiang
Computer Engineering & Software 2019

Invited Talks

Content, Link to the talk, and Date:

1. *Fully Automated Release and Code Review with CI/CD*, **Open Source Summit** Europe 09/2024
2. *Virtual Network Systems among Containers*, **Aalto** University Secure Systems Demo Day 06/2023
3. *Multi-Select Plugin*, **Google** Blockly Summit 06/2023
4. *Native CSV Parser*, **Microsoft Research** NYC Seminar (RLOSFest) 08/2022
5. *Summary of my Open Source Internship*, **openEuler** Excellent Intern Seminar 08/2022
6. *Update Notification Program in Python*, **openEuler** University Developer Competition 05/2021
7. *Summary of my Contribution to Arthas*, **Alibaba** Summer of Code Presentation 08/2020

Certificates & Honors & Awards

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|---|-------------|
| Travel Funding for Google Blockly Summit | 2024 – 2025 |
| Aalto University School of Science Dean's Incentive Scholarship | 2023 – 2024 |
| SECCLO Erasmus Mundus Scholarship | 2022 – 2024 |
| (26/767) Full-ride scholarship, includes full tuition fee waiver, covers all living costs and travel expenses | |
| Delegate of OpenSUSE Project for Google Summer of Code 2024 Mentor Summit | 2024 |
| Joint funded by Google and openSUSE Travel Support Program | |
| Travel Fund for The Linux Foundation Open Source Summit Europe 2024 | 2024 |
| To speak at the LFX Mentorship Showcase | |
| Certified Kubernetes Security Specialist (CKS), CNCF | 2024 |
| Black Hat Europe 2023 Student Scholarship | 2023 |
| Cloud Captains in Linux Foundation Training (LiFT) Scholarship (China) | 2022 |
| Huawei Cloud Certified Developer Associate in Internet of Things (HCCDA - IoT) | 2022 |
| Certified Kubernetes Administrator (CKA), CNCF | 2022 |
| Recognized Tencent Open Source Contributor | 2022 |
| Only 30+ were issued globally by the end of 2022 | |
| Intern of Excellence Award at Tencent | 2022 |
| Only 2/4000+ received all the 3 kinds of intern awards | |
| Intern of Excellence & Star of Open Source Award in openEuler Open Source Internship | 2022 |
| Only 3/150+ interns received both awards | |
| China Ministry of Education & Huawei "Intelligent Base" Future Star Scholarship | 2021 |
| Software Design Engineer, China Qualification of Computer and Software Professional | 2021 |
| Academic Aces in Linux Foundation Training (LiFT) Scholarship (China) | 2020 |
| CATTI Level 3 (English & Chinese) Translator | 2020 |
| Best Paper Award in Lanzhou University Summer Social Practice Report | 2020 |
| Paper: Research on the Functionality and Optimization of Urban Communities in China During COVID-19 in 2020 | |
| Award in openEuler University Developer Competition | 2020 |
| (24/547 Teams) I participated alone, ranked 1st in final defense | |
| China Scholarship Council Outstanding Undergraduate International Exchange Scholarship | 2019 |
| (Only 1) Full covering of visa fees, traveling fees, and living costs, plus the host university exchange program tuition fee waiver agreement | |
| Google InnoCamp Hangzhou BoostMakers – TensorFlow Boost | 2019 |
| Only 40+/2000+ got this certificate | |
| Excellent Project Award in Lanzhou University Innovation and Entrepreneurship Plan | 2019 |
| Only 122/1268 got this award | |
| Nine Lanzhou University Undergraduate Scholarships | 2018 – 2022 |
| 3 x scholarship for academic excellence, 5 x scholarship for innovation and entrepreneurship projects, 2020 scholarship for IELTS test fee | |

Professional Activities

openSUSE Member

2021 – Present

Continued and substantial contributions to the openSUSE project. With voting rights and the ability to run for the openSUSE board

Reviewing.....

- International Conference on Learning Representations (**ICLR**) 2026
- Medical Imaging with Deep Learning (**MIDL**) 2026
- Annual Conference on Neural Information Processing Systems (**NeurIPS**) 2025
- Neural Information Processing Systems (**NeurIPS**) 2025 Datasets & Benchmarks Track
- International Conference on Learning Representations (**ICLR**) 2025
- International Joint Conference on Artificial Intelligence (**IJCAI**) 2025 Survey Track
- **IJCAI** 2025 Special Track on AI for Social Good
- International Joint Conference on Neural Networks (**IJCNN**) 2025
- Medical Imaging with Deep Learning (**MIDL**) 2025
- Latinx in AI Workshop at **NeurIPS** 2025
- International Conference on Green Artificial Intelligence and Industrial Applications (**GreenAI** 2025)
- Latinx in AI Workshop at **NeurIPS** 2024
- ACM Special Interest Group on Management of Data (**SIGMOD**) 2023 Availability & Reproducibility

Skills

Programming C++, Go, Rust, Python, C, Java, Kotlin, JavaScript, SQL, HTML, Bash, PHP, Ruby ...

Frameworks Kubernetes, TensorFlow, Docker, PyTorch, Pandas, GitHub Actions, Flutter, React, QT ...

DataBases PostgreSQL, MongoDB, Redis, InfluxDB, TimescaleDB, HBase, Hive, Hadoop, Spark ...

Research Projects Before Doctoral Research

- **Virtual Network Systems among Containers** 2023
Prof. Tuomas Aura, *Aalto University*
- **Hybrid Model for Stock Price Prediction Based on Time Series and Neural Network** 2021
Dr. Weiwei Liu, *Lanzhou University*
- **Renaissance – Use AI to Repair Old Photos** 2020
Prof. Chao Ren, *Lanzhou University*
- **Skin Cancer detection Method Based on CNN** 2020
Dr. Xin Lv, *Lanzhou University*
- **Renaissance – AI + Dunhuang Art** 2019
Prof. Qingguo Zhou, *Lanzhou University*
- **Self-balancing Bike** 2019
Prof. Hongxin Li, *Lanzhou University*

Software Copyrights

- Hollow Software for Smartly Memorizing Words CN 2020SR0839716
- Hollow Software System for Sport Center Management CN 2020SR0839709
- Hollow Software for Jack Compiler CN 2020SR0839702
- Hollow Software for Picture & Video Information Hiding En-Decryption CN 2020SR0079950
- Face Recognition Access Control System CN 2019SR1388115