

Songlin Jiang

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🐦 [HollowM186](https://twitter.com/HollowM186) • [HollowMan6](https://www.youtube.com/channel/UCv3v3v3v3v3v3v3v3v3v3v3) • Last updated on September 19, 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. 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**). Additionally, I am a passionate **free software developer**. During my leisure time, 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 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

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](#)

Open Source Repositories

1.6k GitHub followers. 171.4k GitHub stars across all of the following selected repositories:

| | | | |
|-----|--|---|------|
| 1. | deepspeedai/DeepSpeed | ★40.1k Training Framework | 2025 |
| | Rank #40 among all contributors with 12 commits, 119 lines of additions and 76 lines of deletions | | |
| 2. | zhuzilin/ring-flash-attention | ★872 Ring Attention | 2025 |
| | Rank #3 among all contributors with 4 commits, 124 lines of additions and 23 lines of deletions | | |
| 3. | volcengine/verl | ★13.5k RLHF Framework | 2025 |
| | Rank #14 among all contributors with 19 commits, 854 lines of additions and 618 lines of deletions | | |
| 4. | OpenRLHF/OpenRLHF | ★8k RLHF Framework | 2024 |
| | Rank #5 among all contributors with 33 commits, 531 lines of additions and 199 lines of deletions | | |
| 5. | run-llama/llama_index | ★44.3k RAG Framework | 2023 |
| | Rank #95 among all contributors with 6 commits, 427 lines of additions and 24 lines of deletions | | |
| 6. | kubescape/kubescape | ★11k Kubernetes Security Platform | 2023 |
| | Rank #9 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions | | |
| 7. | Igalia/wolvic | ★903 Immersive VR Browser | 2023 |
| 8. | VowpalWabbit/vowpal_wabbit | ★8.6k Machine Learning System | 2022 |
| | Rank #58 among all contributors with 8 commits, 0 lines of additions and 0 lines of deletions | | |
| 9. | rust-headless-chrome/rust-headless-chrome | ★2.7k Chrome DevTools Protocol in Rust | 2022 |
| | Rank #12 among all contributors with 7 commits, 87 lines of additions and 12 lines of deletions | | |
| 10. | ThibaultJanBeyer/DragSelect | ★763 Multi-Select UI Library | 2022 |
| | Rank #7 among all contributors with 3 commits, 213 lines of additions and 23 lines of deletions | | |
| 11. | debian-cryptoanarchy/cryptoanarchy-deb-repo-builder | ★144 Bitcoin Packages for Debian | 2022 |
| | Rank #3 among all contributors with 7 commits, 245 lines of additions and 22 lines of deletions | | |
| 12. | HollowMan6/mdbook-pdf | ★188 MdBBook backend for PDF Generation | 2022 |
| | Rank #1 among all contributors with 61 commits, 3515 lines of additions and 742 lines of deletions | | |

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|-----|--|--------|--|------|
| 13. | 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 | | | |
| 14. | 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 | | | |
| 15. | 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 | | | |
| 16. | openSUSE/IBus-Theme-Hub | ★30 | IBus Themes CSS Hub | 2021 |
| | Rank #1 among all contributors with 21 commits, 3190 lines of additions and 442 lines of deletions | | | |
| 17. | openSUSE/IBus-Theme-Tools | ★21 | IBus Theme Generator | 2021 |
| | Rank #1 among all contributors with 104 commits, 8558 lines of additions and 4654 lines of deletions | | | |
| 18. | alibaba/arthas | ★36.7k | Java Diagnostic Tool | 2020 |
| | Rank #2 among all contributors with 80 commits, 25191 lines of additions and 1543 lines of deletions | | | |
| 19. | emacs-eaf/emacs-application-framework | ★3.3k | Emacs Application Framework | 2020 |
| | Rank #5 among all contributors with 49 commits, 3482 lines of additions and 1033 lines of deletions | | | |
| 20. | HollowMan6/TinyML-ESP32 | ★175 | TinyML Programs for ESP32 | 2020 |
| | Rank #1 among all contributors with 11 commits, 78393 lines of additions and 19530 lines of deletions | | | |
| 21. | 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, 176 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

2019.....

2. [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

Travel Funding for **Google** Blockly Summit 2024 – 2025

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|--|-------------|
| Aalto University School of Science Dean's Incentive Scholarship | 2023 – 2024 |
| SECCLO Erasmus Mundus Scholarship (26/767) Full-ride scholarship, includes full tuition fee waiver, covers all living costs and travel expenses | 2022 – 2024 |
| Delegate of OpenSUSE Project for Google Summer of Code 2024 Mentor Summit Joint funded by Google and openSUSE Travel Support Program | 2024 |
| Travel Fund for The Linux Foundation Open Source Summit Europe 2024 To speak at the LFX Mentorship Showcase | 2024 |
| 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 Only 30+ were issued globally by the end of 2022 | 2022 |
| Intern of Excellence Award at Tencent Only 2/4000+ received all the 3 kinds of intern awards | 2022 |
| Intern of Excellence & Star of Open Source Award in openEuler Open Source Internship Only 3/150+ interns received both awards | 2022 |
| 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 Paper: Research on the Functionality and Optimization of Urban Communities in China During COVID-19 in 2020 | 2020 |
| Award in openEuler University Developer Competition (24/547 Teams) I participated alone, ranked 1st in final defense | 2020 |
| China Scholarship Council Outstanding Undergraduate International Exchange Scholarship (Only 1) Full covering of visa fees, traveling fees, and living costs, plus the host university exchange program tuition fee waiver agreement | 2019 |
| Google InnoCamp Hangzhou BoostMakers – TensorFlow Boost Only 40+/2000+ got this certificate | 2019 |
| Excellent Project Award in Lanzhou University Innovation and Entrepreneurship Plan Only 122/1268 got this award | 2019 |
| Nine Lanzhou University Undergraduate Scholarships 3 x scholarship for academic excellence, 5 x scholarship for innovation and entrepreneurship projects, 2020 scholarship for IELTS test fee | 2018 – 2022 |

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

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
- 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
- Student Research Workshop (SRW) at **ACL** 2025
- Workshop on Recent Advances in Time Series Foundation Models (BERT2S) at **NeurIPS** 2025
- Workshop on Mathematical Reasoning and AI (MATH-AI) at **NeurIPS** 2025
- Latinx in AI Workshop at **NeurIPS** 2025
- Workshop SoLaR at Conference on Language Modeling (**COLM**) 2025
- Deployable AI Workshop (DAI) at AAAI Conference on Artificial Intelligence (**AAAI**) 2025
- Multi-Agent AI in the Real World (MARW) Workshop at **AAAI** 2025
- International Workshop on AI Governance (AIGOV) at **AAAI** 2025
- Workshop on Deep Generative Model in Machine Learning: Theory, Principle and Efficacy at **ICLR** 2025
- Workshop on GenAI Watermarking at **ICLR** 2025
- Workshop on Foundation Models in the Wild at **ICLR** 2025
- Workshop XAI4Science at **ICLR** 2025
- International Conference on Green Artificial Intelligence and Industrial Applications (**GreenAI**) 2025
- Compression Workshop at Conference on Neural Information Processing Systems (**NeurIPS**) 2024
- Safe Generative AI Workshop at **NeurIPS** 2024

- **NeurIPS** 2024 Workshop on Bayesian Decision-making and Uncertainty (BDU)
- 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 ...