Songlin Jiang

✉ hollowman@opensuse.org • 🌐 hollowman6.github.io • **in** songlin-jiang

🐦 HollowM186 • ⚙ HollowMan6 • Last updated on November 4, 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, *Fellou* (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**

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, *Enclaive* (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. 129.9k GitHub stars across all of the following selected repositories:

1. deepspeedai/DeepSpeed   ★40.6k *Training Framework*   2025
   Rank #41 among all contributors with 12 commits, 119 lines of additions and 76 lines of deletions
2. zhuzilin/ring-flash-attention   ★904   *Ring Attention*   2025
   Rank #3 among all contributors with 4 commits, 124 lines of additions and 23 lines of deletions
3. volcengine/verl   ★15.1k *RLHF Framework*   2025
   Rank #7 among all contributors with 46 commits, 1813 lines of additions and 1435 lines of deletions
4. OpenRLHF/OpenRLHF   ★8.3k *RLHF Framework*   2024
   Rank #5 among all contributors with 33 commits, 531 lines of additions and 199 lines of deletions
5. kubescape/kubescape   ★11k   *Kubernetes Security Platform*   2023
   Rank #9 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions
6. Igalia/wolvic   ★911   *Immersive VR Browser*   2023
7. VowpalWabbit/vowpal_wabbit   ★8.6k *Machine Learning System*   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 *Chrome DevTools Protocol in Rust* 2022
   Rank #12 among all contributors with 7 commits, 87 lines of additions and 12 lines of deletions
9. ThibaultJanBeyer/DragSelect   ★765   *Multi-Select UI Library*   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 *Bitcoin Packages for Debian* 2022
   Rank #3 among all contributors with 7 commits, 245 lines of additions and 22 lines of deletions

11. HollowMan6/mdbook-pdf ★194 *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 ★25 *Super Resolution Model* 2020
   Rank #1 among all contributors with 23 commits, 21397 lines of additions and 1399 lines of deletions

Publications [Google Scholar, 230 citations with h-index of 1]

2025...

1. *OpenRLHF: A Ray-based Easy-to-use, Scalable and High-performance RLHF Framework*
   Jian Hu, Xibin Wu, Wei Shen, Jason Klein Liu, Weixun Wang, **Songlin Jiang**, Haoran Wang,
   Hao Chen, Bin Chen, Wenkai Fang, Xianyu, Yu Cao, Haotian Xu, and Yiming Liu
   Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing: 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

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 × scholarship for academic excellence, 5 × 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