

# Songlin Jiang

✉ hollowman@opensuse.org • 🌐 hollowman6.github.io • ⚡ songlin-jiang  
🐦 HollowM186 • 💬 HollowMan6 • Last updated on November 5, 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**

<b>AI Prompt Engineer, Outlier</b> (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	
<b>OSPP Summer, OceanBase</b> (add support for the IVFPQ vector index algorithm)	06/2024 – 10/2024
○ Enable more vector indexing capabilities for OceanBase – a multi-cloud <b>distributed SQL database</b>	
○ OceanBase is developed by Ant Group (Alibaba), supports the peak traffic in Double 11 Shopping Festivals	
<b>Mentor for Google Summer of Code 2024, MIT CSAIL &amp; OpenSUSE</b> (simultaneously)	05/2024 – 09/2024
○ Mentor Chang Min Bark for <a href="#">Updating the Multi-select Plugin in Blockly and Cross-testing Other Plugins</a>	
○ Mentor Jiamin Wang for <a href="#">Refactor Customize IBus with Modern Interface and Extensibility</a>	
<b>Junior Application Specialist, CSC - IT Center for Science</b> (master's thesis)	01/2024 – 07/2024
○ Implement the <b>real-time GPU usage alert service</b> for HPC clusters	
○ Deploy <b>Large Language Models (LLM) inference</b> service in HPC environment with <a href="#">vLLM</a>	
<b>Founder, Hollow Software</b> (company registered and established in Finland, business ID: 3369577-7)	06/2023 – Present
○ Freelance for full-stack computer programming tasks	
<b>Developer Relations Engineer, Enclave</b> (confidential computing, with Prof. Sebastian Gajek)	06/2023 – 05/2024
○ Create technical <b>documentation</b> , tutorials and content	
○ Manage channel to <b>interact</b> with the community and grow the customer base	
<b>Coding Experience 2023 I &amp; II, Igalia</b> ( <a href="#">Wolvic</a> , ex. Mozilla Firefox Reality)	06/2023 – 12/2023
○ Develop <b>VR Browser</b> , refactor <b>Android</b> deprecated methods	
○ Address user issues. Implement UI, graphics, browser, and <b>openXR</b> related features	
○ Contribute to the majority of the features available from <a href="#">v1.4.2 – v1.6</a>	
<b>HPC Developer Internship, CSC - IT Center for Science</b>	05/2023 – 08/2023
○ Develop the <b>GPU monitoring service</b> for HPC clusters (NVIDIA and AMD GPUs, including LUMI)	
○ Develop the Documentation GPT chatbot service using <a href="#">llamaIndex</a> , <a href="#">LangChain</a> and <a href="#">Redis/Qdrant</a>	
○ Make <a href="#">improvements</a> to the HPC web operating interface project <a href="#">Open OnDemand</a> using <a href="#">Ruby on Rails</a>	
○ LUMI ranked <b>3rd</b> around the world and <b>1st in Europe</b> at HPC supercomputer <a href="#">TOP500 list by 06/2023</a>	
<b>CNCF LFX Mentorship, Kubescape</b> (Kubernetes security platform)	03/2023 – 05/2023
○ Add packaging support for various <b>package managers</b> in <b>Linux</b> , <b>macOS</b> , and <b>Windows</b>	
○ Improve <b>release CI</b> by adding <b>ARM64</b> binaries building and testing support ( <b>QEMU</b> and <b>cross compiling</b> )	
○ Add support for Kubescape auto version bumping in other Kubescape-related repositories	
○ Enable Kubescape <a href="#">GitHub action</a> to support <b>code review</b> based on generated <a href="#">SARIF report</a>	
○ A <a href="#">blog post</a> by <b>Cloud Native Computing Foundation (CNCF)</b> that introduces my work	
<b>Rhino-Bird Open-Source Training Program, Tencent</b> (Kona JDK)	07/2022 – 09/2022
○ Investigate keypairs generation for <b>SM2</b> with <b>JDK</b> , compare <b>performance</b> and <b>security</b> of algorithms	
<b>Google Summer of Code, MIT CSAIL &amp; Google</b> ( <a href="#">Blockly</a> , web-based visual program editor)	05/2022 – 09/2022
○ Create a <a href="#">plugin</a> to allow selecting, dragging and manipulating <b>multiple blocks at once</b> for Google Blockly	
○ Resolve the <a href="#">issue</a> that had troubled the <b>Google Engineers for a decade</b> (since the Blockly project started)	
○ <a href="#">@mit-app-inventor/blockly-plugin-workspace-multiselect</a> now has an average of <b>250+</b> downloads per week	
<b>Summer of Bitcoin, Cryptoanarchy Debian</b> (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. <a href="#">deepspeedai/DeepSpeed</a>  | ★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. <a href="#">zhuzilin/ring-flash-attention</a>  | ★904 <i>Ring Attention</i>                    | 2025 |
| Rank #3 among all contributors with 4 commits, 124 lines of additions and 23 lines of deletions     |   |      |
| 3. <a href="#">volcengine/verl</a>  | ★15.1k <i>RLHF Framework</i>                  | 2025 |
| Rank #7 among all contributors with 46 commits, 1813 lines of additions and 1435 lines of deletions |   |      |
| 4. <a href="#">OpenRLHF/OpenRLHF</a>  | ★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. <a href="#">kubescape/kubescape</a>  | ★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. <a href="#">Igalia/wolvic</a>  | ★911 <i>Immersive VR Browser</i>              | 2023 |
| 7. <a href="#">VowpalWabbit/vowpal_wabbit</a>   | ★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. <a href="#">rust-headless-chrome/rust-headless-chrome</a>  | ★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. <a href="#">ThibaultJanBeyer/DragSelect</a>  | ★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. <a href="#">debian-cryptoanarchy/cryptoanarchy-deb-repo-builder</a>                             | ★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     |   |      |

11. <a href="#">HollowMan6/mdbook-pdf</a>	★194 <a href="#">MdBook backend for PDF Generation</a>	2022
	Rank #1 among all contributors with 61 commits, 3515 lines of additions and 742 lines of deletions	
12. <a href="#">mit-cml/workspace-multiselect</a>	★14 <a href="#">Blockly Multi-Select Plugin</a>	2022
	Rank #1 among all contributors with 50 commits, 18358 lines of additions and 25270 lines of deletions	
13. <a href="#">openSUSE/Customize-IBus</a>	★78 <a href="#">Full Customization of IBus UI</a>	2021
	Rank #1 among all contributors with 371 commits, 53904 lines of additions and 40932 lines of deletions	
14. <a href="#">HollowMan6/Wechat-Timed-Message</a>	★23 <a href="#">GitHub action for WeChat Message</a>	2021
	Rank #1 among all contributors with 99 commits, 4139 lines of additions and 1718 lines of deletions	
15. <a href="#">openSUSE/IBus-Theme-Hub</a>	★32 <a href="#">IBus Themes CSS Hub</a>	2021
	Rank #1 among all contributors with 21 commits, 3190 lines of additions and 442 lines of deletions	
16. <a href="#">openSUSE/IBus-Theme-Tools</a>	★22 <a href="#">IBus Theme Generator</a>	2021
	Rank #1 among all contributors with 104 commits, 8558 lines of additions and 4654 lines of deletions	
17. <a href="#">alibaba/arthas</a>	★36.8k <a href="#">Java Diagnostic Tool</a>	2020
	Rank #2 among all contributors with 80 commits, 25191 lines of additions and 1543 lines of deletions	
18. <a href="#">emacs-eaf/emacs-application-framework</a>	★3.4k <a href="#">Emacs Application Framework</a>	2020
	Rank #5 among all contributors with 49 commits, 3482 lines of additions and 1033 lines of deletions	
19. <a href="#">HollowMan6/TinyML-ESP32</a>	★180 <a href="#">TinyML Programs for ESP32</a>	2020
	Rank #1 among all contributors with 11 commits, 78393 lines of additions and 19530 lines of deletions	
20. <a href="#">HollowMan6/SRMD-Pytorch</a>	★25 <a href="#">Super Resolution Model</a>	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 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  
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 <a href="#">Google Blockly Summit</a>	2024 – 2025
<b>Aalto University School of Science</b> Dean's Incentive Scholarship	2023 – 2024
<b>SECCLO Erasmus Mundus Scholarship</b>	2022 – 2024
(26/767) Full-ride scholarship, includes full tuition fee waiver, covers all living costs and travel expenses	
<b>Delegate of OpenSUSE Project for Google Summer of Code 2024 Mentor Summit</b>	2024
Joint funded by Google and openSUSE Travel Support Program	
<b>Travel Fund for The Linux Foundation Open Source Summit Europe 2024</b>	2024
To speak at the LFX Mentorship Showcase	
<b>Certified Kubernetes Security Specialist (CKS), CNCF</b>	2024
<b>Black Hat</b> Europe 2023 Student Scholarship	2023
<b>Cloud Captains in Linux Foundation Training (LiFT) Scholarship (China)</b>	2022
<b>Huawei</b> Cloud Certified Developer Associate in Internet of Things (HCCDA - IoT)	2022
<b>Certified Kubernetes Administrator (CKA), CNCF</b>	2022
<b>Recognized Tencent</b> Open Source Contributor	2022
Only 30+ were issued globally by the end of 2022	
<b>Intern of Excellence Award at Tencent</b>	2022
Only 2/4000+ received all the 3 kinds of intern awards	
<b>Intern of Excellence &amp; Star of Open Source Award in openEuler Open Source Internship</b>	2022
Only 3/150+ interns received both awards	
<b>China Ministry of Education &amp; Huawei "Intelligent Base" Future Star Scholarship</b>	2021
<b>Software Design Engineer, China Qualification of Computer and Software Professional</b>	2021
<b>Academic Aces in Linux Foundation Training (LiFT) Scholarship (China)</b>	2020
<b>CATTI</b> Level 3 (English & Chinese) Translator	2020
<b>Best Paper Award</b> in <a href="#">Lanzhou University</a> Summer Social Practice Report	2020
Paper: Research on the Functionality and Optimization of Urban Communities in China During COVID-19 in 2020	
<b>Award in openEuler University Developer Competition</b>	2020
(24/547 Teams) I participated alone, ranked 1st in final defense	
<b>China Scholarship Council Outstanding Undergraduate International Exchange Scholarship</b>	2019
(Only 1) Full covering of visa fees, traveling fees, and living costs, plus the host university exchange program tuition fee waiver agreement	
<b>Google InnoCamp Hangzhou BoostMakers – TensorFlow Boost</b>	2019
Only 40+/2000+ got this certificate	
<b>Excellent Project Award</b> in <a href="#">Lanzhou University</a> Innovation and Entrepreneurship Plan	2019
Only 122/1268 got this award	
<b>Nine Lanzhou University Undergraduate Scholarships</b>	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