

# Songlin Jiang

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🐦 [HollowM186](https://twitter.com/HollowM186) • [HollowMan6](https://www.youtube.com/channel/UCB8U3U3U3U3U3U3U3U3U3U3) • Last updated on September 20, 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

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1.6k GitHub followers. 171.5k GitHub stars across all of the following selected repositories:

- |  |  |      |
|--|--|------|
| 1. <a href="#">deepspeedai/DeepSpeed</a>   | ★40.1k <a href="#">Training Framework</a>              | 2025 |
| Rank #40 among all contributors with 12 commits, 119 lines of additions and 76 lines of deletions  |  |      |
| 2. <a href="#">zhuzilin/ring-flash-attention</a>   | ★873 <a href="#">Ring Attention</a>                    | 2025 |
| Rank #3 among all contributors with 4 commits, 124 lines of additions and 23 lines of deletions    |  |      |
| 3. <a href="#">volcengine/verl</a>   | ★13.6k <a href="#">RLHF Framework</a>                  | 2025 |
| Rank #14 among all contributors with 19 commits, 854 lines of additions and 618 lines of deletions |  |      |
| 4. <a href="#">OpenRLHF/OpenRLHF</a>   | ★8k <a href="#">RLHF Framework</a>                     | 2024 |
| Rank #5 among all contributors with 33 commits, 531 lines of additions and 199 lines of deletions  |  |      |
| 5. <a href="#">run-llama/llama_index</a>   | ★44.3k <a href="#">RAG Framework</a>                   | 2023 |
| Rank #95 among all contributors with 6 commits, 427 lines of additions and 24 lines of deletions   |  |      |
| 6. <a href="#">kubescape/kubescape</a>   | ★11k <a href="#">Kubernetes Security Platform</a>      | 2023 |
| Rank #9 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions  |  |      |
| 7. <a href="#">Igalia/wolvic</a>   | ★903 <a href="#">Immersive VR Browser</a>              | 2023 |
| 8. <a href="#">VowpalWabbit/vowpal_wabbit</a>  | ★8.6k <a href="#">Machine Learning System</a>          | 2022 |
| Rank #58 among all contributors with 8 commits, 0 lines of additions and 0 lines of deletions      |  |      |
| 9. <a href="#">rust-headless-chrome/rust-headless-chrome</a>                                       | ★2.7k <a href="#">Chrome DevTools Protocol in Rust</a> | 2022 |
| Rank #12 among all contributors with 7 commits, 87 lines of additions and 12 lines of deletions    |  |      |
| 10. <a href="#">ThibaultJanBeyer/DragSelect</a>  | ★763 <a href="#">Multi-Select UI Library</a>           | 2022 |
| Rank #7 among all contributors with 3 commits, 213 lines of additions and 23 lines of deletions    |  |      |
| 11. <a href="#">debian-cryptoanarchy/cryptoanarchy-deb-repo-builder</a>                            | ★144 <a href="#">Bitcoin Packages for Debian</a>       | 2022 |
| Rank #3 among all contributors with 7 commits, 245 lines of additions and 22 lines of deletions    |  |      |
| 12. <a href="#">HollowMan6/mdbook-pdf</a>  | ★188 <a href="#">MdBk backend for PDF Generation</a>   | 2022 |
| Rank #1 among all contributors with 61 commits, 3515 lines of additions and 742 lines of deletions |  |      |

13.	<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			
14.	<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			
15.	<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			
16.	<a href="#">openSUSE/IBus-Theme-Hub</a>	★30	<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			
17.	<a href="#">openSUSE/IBus-Theme-Tools</a>	★21	<a href="#">IBus Theme Generator</a>	2021
	Rank #1 among all contributors with 104 commits, 8558 lines of additions and 4654 lines of deletions			
18.	<a href="#">alibaba/arthas</a>	★36.7k	<a href="#">Java Diagnostic Tool</a>	2020
	Rank #2 among all contributors with 80 commits, 25191 lines of additions and 1543 lines of deletions			
19.	<a href="#">emacs-eaf/emacs-application-framework</a>	★3.3k	<a href="#">Emacs Application Framework</a>	2020
	Rank #5 among all contributors with 49 commits, 3482 lines of additions and 1033 lines of deletions			
20.	<a href="#">HollowMan6/TinyML-ESP32</a>	★175	<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			
21.	<a href="#">HollowMan6/SRMD-Pytorch</a>	★26	<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, 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

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

○ <b>Virtual Network Systems among Containers</b> Prof. Tuomas Aura, <i>Aalto University</i>	2023
○ <b>Hybrid Model for Stock Price Prediction Based on Time Series and Neural Network</b> Dr. Weiwei Liu, <i>Lanzhou University</i>	2021

- **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

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- 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

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### 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

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**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 ...

## Courses

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Some top-quality courses I've taken:

- [Program Analysis](#), *DTU* Fall 2023
- [Programming Parallel Computers](#), *Aalto University* Spring 2023
- [Platform Security](#), *Aalto University* Spring 2023
- [Cloud Software and Systems](#), *Aalto University* Fall 2022
- [Multimedia Services in Internet](#), *Aalto University* Fall 2022
- [Designing and Building Scalable Web Applications](#), *Aalto University* Fall 2022
- [Network Security](#), *Aalto University* Fall 2022
- [Formal Languages and Finite Automata](#), *University of Leeds* Spring 2020