

# Songlin Jiang

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🐦 [HollowM186](#) • [HollowMan6](#) • Last updated on December 15, 2023

My academic fervor converges with enhancing **computer systems**, **networks**, **databases**, and their corresponding **security** aspects, which allows my research to have impacts on computing for both the environment (**greener while efficient**) and people (**faster while reliable**). Additionally, I am a passionate **free software advocate**. During my leisure time, I maintain several open-source projects and contribute to many others.

## Education

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

- Improve Large Language Models (LLMs) training efficiency on HPC clusters
- Reinforcement Learning from Human Feedback (RLHF)
- Supervisor: [Prof. Bo Zhao](#)

**M.Sc. in SECULO Erasmus Mundus**, *Aalto University* (4.93/5) 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](#)

**M.Sc. in SECULO Erasmus Mundus**, *Technical University of Denmark (DTU)* 08/2023 – 07/2024

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

**Exchange**, *University of Leeds* 01/2020 – 06/2020

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

- Thesis: *A Short-Term Wind Speed Multistep-Ahead Hybrid Prediction Model based on ICEEMDAN and Prophet-GRU-NN*
- Supervisor: [Prof. Chao Ren](#)

## Experience

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**Open Source Software Engineer**, *Igalia* ([Wolvic](#), ex. Mozilla Firefox Reality) 06/2023 – Present

- 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+

**Junior Application Specialist (Thesis Worker)**, *CSC - IT Center for Science* 01/2024 – 07/2024

- Work on the master's thesis for SECULO Erasmus Mundus program
- Implement the **real-time GPU usage alert service** for HPC clusters
- Investigate the **continuous aggregates** feature of TimescaleDB
- LUMI ranked **3rd** around the world and **1st in Europe** at HPC supercomputer TOP500 list by 06/2023

**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

- 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**
  - Make **improvements** to the HPC web operating interface project *Open OnDemand* using **Ruby on Rails**
- 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 **50+** 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 **100+** 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 **100+** 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**

## Certificates & Honors & Awards

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<b>SECCLO Erasmus Mundus Scholarship</b> <small>(26/767) Full-ride scholarship, includes full tuition fee waiver, covers all living costs and travel expenses</small>	2022 – 2024
<b>Black Hat Europe 2023 Student Scholarship</b>	2023
<b>Aalto University School of Science Dean's Incentive 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> <small>Only 30+ were issued globally by the end of 2022</small>	2022
<b>Intern of Excellence Award at Tencent</b> <small>Only 2/4000+ received all the 3 kinds of intern awards</small>	2022
Intern of Excellence & Star of Open Source Award in <b>openEuler Open Source Internship</b> <small>Only 3/150+ interns received both awards</small>	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
Excellent Student Award in <b>Baidu Software Engineering Training Camp</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> <small>Paper: Research on the Functionality and Optimization of Urban Communities in China During COVID-19 in 2020</small>	2020
Award in <b>openEuler University Developer Competition</b> <small>(24/547 Teams) I participated alone, ranked 1st in final defense</small>	2020
<b>Star of Innovation Award in Alibaba T-head OCC Developers IoT Innovation Competition</b> <small>My proposal ranked 1st in voting (850 votes, 300 more than the 2nd one)</small>	2020
<b>China Scholarship Council Outstanding Undergraduate International Exchange Scholarship</b> <small>(Only 1) Full covering of visa fees, traveling fees, and living costs, plus the host university exchange program tuition fee waiver agreement</small>	2019
<b>Google InnoCamp Hangzhou BoostMakers – TensorFlow Boost</b> <small>Only 40+/2000+ got this certificate</small>	2019
<b>Excellent Project Award in Lanzhou University Innovation and Entrepreneurship Plan</b> <small>Only 122/1268 got this award</small>	2019
<b>Nine Lanzhou University undergraduate scholarships</b> <small>3 x scholarship for academic excellence, 5 x scholarship for innovation and entrepreneurship projects, 2020 scholarship for IELTS test fee</small>	2018 – 2022

## Open Source Repositories

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1.5k+ GitHub followers. 58k+ GitHub stars across all of the following selected repositories:

1. <b>kubescape/kubescape</b> <small>Rank #10 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions</small>	★9.3k <i>Kubernetes Security Platform</i>	2023
2. <b>Igalia/wolvic</b> <small>Rank #7 among all contributors with 128 commits, 9086 lines of additions and 3929 lines of deletions</small>	★648 <i>Immersive VR Browser</i>	2023

3.	<a href="#">VowpalWabbit/vowpal_wabbit</a>	★8.3k	<i>Machine Learning System</i>	2022
	Rank #77 among all contributors with 3 commits, 1611 lines of additions and 83 lines of deletions			
4.	<a href="#">rust-headless-chrome/rust-headless-chrome</a>	★1.9k	<i>Chrome DevTools Protocol in Rust</i>	2022
	Rank #15 among all contributors with 5 commits, 58 lines of additions and 9 lines of deletions			
5.	<a href="#">ThibaultJanBeyer/DragSelect</a>	★619	<i>Multi-Select UI Library</i>	2022
	Rank #6 among all contributors with 3 commits, 213 lines of additions and 23 lines of deletions			
6.	<a href="#">debian-cryptoanarchy/cryptoanarchy-deb-repo-builder</a>	★140	<i>Bitcoin Packages for Debian</i>	2022
	Rank #4 among all contributors with 7 commits, 245 lines of additions and 22 lines of deletions			
7.	<a href="#">HollowMan6/mdbook-pdf</a>	★112	<i>MdBook backend for PDF Generation</i>	2022
	Rank #1 among all contributors with 38 commits, 3181 lines of additions and 562 lines of deletions			
8.	<a href="#">mit-cml/workspace-multiselect</a>	★7	<i>Blockly Multi-Select Plugin</i>	2022
	Rank #1 among all contributors with 20 commits, 12310 lines of additions and 21325 lines of deletions			
9.	<a href="#">openSUSE/Customize-IBus</a>	★51	<i>Full Customization of IBus UI</i>	2021
	Rank #1 among all contributors with 354 commits, 42984 lines of additions and 30128 lines of deletions			
10.	<a href="#">HollowMan6/Wechat-Timed-Message</a>	★22	<i>GitHub action for WeChat Message</i>	2021
	Rank #1 among all contributors with 99 commits, 4139 lines of additions and 1718 lines of deletions			
11.	<a href="#">openSUSE/IBus-Theme-Hub</a>	★19	<i>IBus Themes CSS Hub</i>	2021
	Rank #1 among all contributors with 21 commits, 3190 lines of additions and 442 lines of deletions			
12.	<a href="#">openSUSE/IBus-Theme-Tools</a>	★14	<i>IBus Theme Generator</i>	2021
	Rank #1 among all contributors with 104 commits, 8558 lines of additions and 4654 lines of deletions			
13.	<a href="#">alibaba/arthas</a>	★33.9k	<i>Java Diagnostic Tool</i>	2020
	Rank #2 among all contributors with 80 commits, 25191 lines of additions and 1543 lines of deletions			
14.	<a href="#">emacs-eaf/emacs-application-framework</a>	★2.9k	<i>Emacs Application Framework</i>	2020
	Rank #5 among all contributors with 49 commits, 3482 lines of additions and 1033 lines of deletions			
15.	<a href="#">HollowMan6/TinyML-ESP32</a>	★114	<i>TinyML Programs for ESP32</i>	2020
	Rank #1 among all contributors with 11 commits, 78393 lines of additions and 19530 lines of deletions			
16.	<a href="#">HollowMan6/SRMD-Pytorch</a>	★20	<i>Super Resolution Model</i>	2020
	Rank #1 among all contributors with 23 commits, 21397 lines of additions and 1399 lines of deletions			

## Invited Talks

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Content, Link to the talk, and Date:

1.	<i>Virtual Network Systems among Containers</i> , Aalto University Secure Systems Demo Day	06/2023
2.	<i>Multi-Select Plugin</i> , Google Blockly Summit	06/2023
3.	<i>Native CSV Parser</i> , Microsoft Research NYC Seminar (RLOSfest)	08/2022
4.	<i>Summary of my Open Source Internship</i> , openEuler Excellent Intern Seminar	08/2022
5.	<i>Update Notification Program in Python</i> , openEuler University Developer Competition	05/2021
6.	<i>Summary of my Contribution to Arthas</i> , Alibaba Summer of Code Presentation	08/2020

## 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](#).....

○ ACM SIGMOD 2023 Availability & Reproducibility

## Research Projects

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- **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

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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

## Publications [Google Scholar, 2 citations with h-index of 1]

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

## 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