

Songlin Jiang

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🐦 [HollowM186](#) • [HollowMan6](#) • Last updated on November 21, 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

M.Sc. in SECCLO Erasmus Mundus, *Aalto University* (4.93/5) 2022 – 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 SECCLO Erasmus Mundus, *Technical University of Denmark (DTU)* 2023 – 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* Spring 2020

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

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

Experience

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, browser, and **openXR** related features
- Contribute to the majority of the features available from [v1.4.2](#), [v1.5](#), and [v1.5.1](#)

HPC Develop Thesis Worker, *CSC - IT Center for Science* 01/2024 – 07/2024

- Work on my master's thesis for SECCLO 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 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*, 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

- SECCLO Erasmus Mundus Scholarship** 2022 – 2024
(26/767) Full-ride scholarship, includes full tuition fee waiver, covers all living costs and travel expenses
- Black Hat Europe 2023 Student Scholarship** 2023

Aalto University School of Science Dean's Incentive 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
Excellent Student Award in Baidu Software Engineering Training Camp	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	
Star of Innovation Award in Alibaba T-head OCC Developers IoT Innovation Competition	2020
My proposal ranked 1st in voting (850 votes, 300 more than the 2nd one)	
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 x scholarship for academic excellence, 5 x scholarship for innovation and entrepreneurship projects, 2020 scholarship for IELTS test fee	

Open Source Repositories

1.5k+ GitHub followers. 55.8k+ GitHub stars across all of the following selected repositories:

1. kubescape/kubescape	★9.2k <i>Kubernetes Security Platform</i>	2023
Rank #9 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions		
2. Igalia/wolvic	★641 <i>Immersive VR Browser</i>	2023
Rank #7 among all contributors with 117 commits, 8008 lines of additions and 3712 lines of deletions		
3. VowpalWabbit/vowpal_wabbit	★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. ThibaultJanBeyer/DragSelect	★611 <i>Multi-Select UI Library</i>	2022
Rank #6 among all contributors with 3 commits, 213 lines of additions and 23 lines of deletions		

5. [debian-cryptoanarchy/cryptoanarchy-deb-repo-builder](#) ★138 *Bitcoin Packages for Debian* 2022
Rank #4 among all contributors with 7 commits, 245 lines of additions and 22 lines of deletions
6. [HollowMan6/mdbook-pdf](#) ★109 *MdBook backend for PDF Generation* 2022
Rank #1 among all contributors with 35 commits, 3152 lines of additions and 527 lines of deletions
7. [mit-cml/workspace-multiselect](#) ★6 *Blockly Multi-Select Plugin* 2022
Rank #1 among all contributors with 18 commits, 11846 lines of additions and 20978 lines of deletions
8. [openSUSE/Customize-IBus](#) ★48 *Full Customization of IBus UI* 2021
Rank #1 among all contributors with 354 commits, 42984 lines of additions and 30128 lines of deletions
9. [HollowMan6/Wechat-Timed-Message](#) ★22 *GitHub action for WeChat Message* 2021
Rank #1 among all contributors with 99 commits, 4139 lines of additions and 1718 lines of deletions
10. [openSUSE/IBus-Theme-Hub](#) ★19 *IBus Themes CSS Hub* 2021
Rank #1 among all contributors with 21 commits, 3190 lines of additions and 442 lines of deletions
11. [openSUSE/IBus-Theme-Tools](#) ★13 *IBus Theme Generator* 2021
Rank #1 among all contributors with 104 commits, 8558 lines of additions and 4654 lines of deletions
12. [alibaba/arthas](#) ★33.8k *Java Diagnostic Tool* 2020
Rank #2 among all contributors with 80 commits, 25191 lines of additions and 1543 lines of deletions
13. [emacs-eaf/emacs-application-framework](#) ★2.8k *Emacs Application Framework* 2020
Rank #5 among all contributors with 49 commits, 3482 lines of additions and 1033 lines of deletions
14. [HollowMan6/TinyML-ESP32](#) ★108 *TinyML Programs for ESP32* 2020
Rank #1 among all contributors with 11 commits, 78393 lines of additions and 19530 lines of deletions
15. [HollowMan6/SRMD-Pytorch](#) ★20 *Super Resolution Model* 2020
Rank #1 among all contributors with 23 commits, 21397 lines of additions and 1399 lines of deletions

Invited Talks

Content, Link to the talk, and Date:

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

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.....

- ACM SIGMOD 2023 Availability & Reproducibility

Research Projects

- **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](#)

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

2019.....

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

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 ...

Courses

Some top-quality courses I've taken:

- **Program Analysis**, *DTU* Fall 2023
- **Program Verification**, *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