# 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**, *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

**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
<small>Only 30+ were issued globally by the end of 2022</small>

Intern of Excellence Award at **Tencent**                                                              2022
<small>Only 2/4000+ received all the 3 kinds of intern awards</small>

Intern of Excellence & Star of Open Source Award in **openEuler** Open Source Internship               2022
<small>Only 3/150+ interns received both awards</small>

**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
<small>Paper: Research on the Functionality and Optimization of Urban Communities in China During COVID-19 in 2020</small>

Award in **openEuler** University Developer Competition                                                2020
<small>(24/547 Teams) I participated alone, ranked 1st in final defense</small>

Star of Innovation Award in **Alibaba T-head** OCC Developers IoT Innovation Competition               2020
<small>My proposal ranked 1st in voting (850 votes, 300 more than the 2nd one)</small>

**China Scholarship Council** Outstanding Undergraduate International Exchange Scholarship              2019
<small>(Only 1) Full covering of visa fees, traveling fees, and living costs, plus the host university exchange program tuition fee waiver agreement</small>

**Google** InnoCamp Hangzhou BoostMakers – TensorFlow Boost                                            2019
<small>Only 40+/2000+ got this certificate</small>

Excellent Project Award in **Lanzhou University** Innovation and Entrepreneurship Plan                 2019
<small>Only 122/1268 got this award</small>

Nine **Lanzhou University** undergraduate scholarships                                            2018 – 2022
<small>3 × scholarship for academic excellence, 5 × scholarship for innovation and entrepreneurship projects, 2020 scholarship for IELTS test fee</small>


## Open Source Repositories

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

1. kubescape/kubescape                    ★9.2k   *Kubernetes Security Platform*        2023
   <small>Rank #9 among all contributors with 40 commits, 745 lines of additions and 555 lines of deletions</small>
2. Igalia/wolvic                          ★641    *Immersive VR Browser*               2023
   <small>Rank #7 among all contributors with 117 commits, 8008 lines of additions and 3712 lines of deletions</small>
3. VowpalWabbit/vowpal_wabbit             ★8.3k   *Machine Learning System*            2022
   <small>Rank #77 among all contributors with 3 commits, 1611 lines of additions and 83 lines of deletions</small>
4. ThibaultJanBeyer/DragSelect            ★611    *Multi-Select UI Library*            2022
   <small>Rank #6 among all contributors with 3 commits, 213 lines of additions and 23 lines of deletions</small>

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  ★108  *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** Docker, TensorFlow, PyTorch, Pandas, Numpy, 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