

# Maoyin Sun

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## Chemnitz University of Technology, Faculty of Computer Science

2016–2024, *Master of Science*, Web Engineering, Chemnitz, Germany.

Distinction: Gut

Degree focus: Systematic and quantifiable approaches to the design, implementation, and operation of web-based solutions

Thesis: *System Design, Implementation and Evaluation of a User-Centered Application for Indoor Sound Classification*. Supervisor: Prof. Danny Kowerko and Arunodhayan Sampathkumar

Keywords: system design, user experience, asynchronous messaging, decoupled architecture, high availability, low-latency streaming, acoustic event classification, deep neural networks

## Ocean University of China, School of Mathematical Sciences

2011–2015, *Bachelor of Science*, Information and Computing Science, Tsingtao, China.

Grade Point Average: 3,2 (*modified Bavarian formula*)

Degree focus: Mathematics, numerical analysis, mathematical modeling, high-performance computing, information theory, and cryptography

Thesis: *An E-voting System Based on Cryptology*. Supervisor: Prof. Jingliang Zhang

Keywords: cryptography, VLR group signature, DTDH Assumption, algorithm design, online certificate revocation, E-voting

## Chinese University of Hong Kong, Business School

2012, *Asia-Pacific Business Talent Exchange Programme*, Hong Kong, China.

Studied basic subjects in commerce, finance and business management and analyzed special cases of recent global financial crisis.

## Robert Bosch GmbH, Division of Cross-Domain Computing Solutions

2022–2023, *Working Student*, Leonberg, Germany.

Designing and developing **lossless and near-lossless compression algorithms** in C++

- Developed lossless and near-lossless image compression softwares for image-based sensors and assessment tools (C++, Computational photography, Computer vision, ADTE, ADAS);
- Set up **knowledge management system deployment pipeline** for **architecture descriptions** with bug fixing of upstream open source projects (Ruby, Gradle, docToolchain, arc42).

## Union Investment, Department of Investment Controlling System

2019–2021, *IT Inhouse Consultant Internship & Working Student*, Specialist for Risk Controlling & Performance Analysis, Frankfurt am Main, Germany.

Responsible for the operation and further development of SS&C Algorithmics and Ortec Pearl (Python, JavaScript, C, Go, Bash, Perl, Oracle DB, Java)

- Created a **parser** to analyze the dependencies of **4.000+ legacy code files** and furthermore provided an interactive visualization and basic **static analysis** (Python, JavaScript, D3.js);
- End-to-end delivered a **new Prometheus-Grafana monitoring system** and implemented exporters which reduced the latency to 200  $\mu$ s (1/150.000). The entire software lifecycle was taken into account throughout the process. (C, Go, Python, Bash, PromQL);
- Implemented new **Var** models and **stress test** scenarios, fixed, maintained and improved legacy code i.g. reduced the memory consumption of a script to **10%** (from 3.1TB to 300GB) without affecting performance, making it feasible to include more data (Perl, Oracle DB);
- Developed bash utilities and visualizations for various analysis including **NUMA tuning**, **Java GC tuning**, and **PL/SQL tuning**, implemented a general sandbox for testing in a clean environment (Bash, Java, Oracle DB, JavaScript, D3.js, etc).

# Chemnitz University of Technology, Faculty of Computer Science

2017, *Research Assistant*, Chemnitz, Germany.

An interdisciplinary research in the *CrossWorlds* graduate school on cognitive and developmental psychology, HCI and system implementation (VR, Unity3D, C#, JavaScript).

## Silicon Spread Corp., Department of Marketing

2016, *Internship*, Dalian, China.

Independently redesigned its website (PHP, HTML, CSS, SVG, JavaScript, Vue.js).

## Lazywrt.org

2013–2014, *Co-Founder & Front-end Developer*, Tsingtao, China.

Designed and developed Lazywrt Wi-Fi router and its firmware and Franz Open-Advertising Wi-Fi AP Cloud Management Platform (OpenWrt, C, Lua, Python, HTML, CSS, JavaScript).

## Prudential plc

2012, *Personal Financial Planning and Analysis Internship*, Hong Kong, China.

Learned and practiced basic knowledge of planning, forecasting and analysis, as well as team working skills on personal finance consulting.

## Competitive Programming Contests

2012–now, multiple locations. Selected awards:

- The 1<sup>st</sup> place at 31<sup>st</sup> Classic Coding Contest 2019 Frankfurt am Main, Germany;
- The 3<sup>rd</sup> place, teamed, at 30<sup>th</sup> Classic Coding Contest 2019 Salzburg, Austria;
- Silver Medal, teamed, 2014 ACM-ICPC Shandong Provincial Programming Contest, China;
- Honorable Mention, teamed, 2013 ACM-ICPC Asia Regional Contest Nanjing On-site, China.

## Cyber Security Contests

2014–now, multiple locations. Selected awards:

- Participation, Randomly teamed, KfW Code Blue Challenge 2023, Germany;
- The 1<sup>st</sup> place, randomly teamed, at IAV Security Hackathon Braunschweig 2019, Germany;
- Second Prize, teamed, Qingdao Collegiate Cyber Security Contest 2014, China.

## Association for Computing Machinery

2014–2016, *Awarded Student Membership*.

## Mathematics Contests in Modeling

2012–2013, multiple locations. Selected awards:

- Honorable Mention, teamed, the 2013 Mathematical Contest in Modeling, global online;
- First Prize, teamed, 2012 China Undergraduate Mathematical Contest in Modeling.

## Project Portfolio

Independent Projects (selected):

- `ell`: A CLI for LLMs written in Bash
- `future-okr`: A demo for OKR management featuring conversational user interface
- `interjector`: An app to enhance speech or dialog with comprehensive and engaging interaction via LLM
- `scd4x-mqtt`: Driver and MQTT Client for SCD4x CO<sub>2</sub> sensor written in Embedded C
- `tid`: Editor with incremental T<sub>E</sub>X rendering

Contributed Projects (selected):

- `microsoft/fluentui`
- `vuejs/vue`
- `asciidoctor/asciidoctor`
- `electron/electron`
- `Crissium/SilverDict`
- `langgenius/dify`
- `lobehub/lobe-chat`
- `highlightjs/highlight.js`

## Languages Spoken

- **Chinese**: Native speaker
- **German**: Working proficiency
- **English**: Professional working proficiency
- **JavaScript**: „Native speaker“