

Jifeng Wu

MASTER OF SCIENCE IN COMPUTER SCIENCE
Software Practices Lab, University of British Columbia
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Education

University of British Columbia

Master of Science in Computer Science

Vancouver, Canada

September 2022 - Current

- Courses taken: CPSC 507 Software Engineering, CPSC 539L Topics in Programming Languages - AUTOMATED TESTING, CPSC 545 Algorithms for Bioinformatics, CPSC 539B Topics in Programming Languages - TYPE SYSTEMS, CPSC 548 Directed Studies

Wuhan University

Bachelor of Science in Software Engineering

Wuhan, China

September 2018 - June 2022

- Cumulative GPA: 3.93/4.00 (ranking first in my class and within the top 2% of 237 students in my major)

Publications

JOURNAL ARTICLES

Effective Stack Wear Leveling for NVM

Jifeng Wu, Wei Li, Libing Wu, Mengting Yuan, Chun Jason Xue, Jingling Xue, Qingan Li

IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (2023) pp. 1–1. 2023

Conference Experience

ICFP 2023

Mentee, Programming Languages Mentoring Workshop

Seattle, Washington

September 4, 2023

The Cornell, Maryland, Max Planck Pre-doctoral Research School 2023

Attendee

Saarbrücken, Germany

August 6 - 13, 2023

ISSTA/ECOOP 2023

Student Volunteer

University of Washington

July 17 - 21, 2023

PNW PLSE 2023 Workshop

Presenter (poster and lightning talk on “Automated Type Inference in Python”)

University of Washington

May 9, 2023

Research Experience

Stack-based Crash Reproduction

Mentor: Prof. Caroline Lemieux

University of British Columbia

July 2023 - Current

- Reproduce a software crash given a stack trace using directed fuzzing and/or search-based techniques.
- Try to overcome the 14 current challenges for crash reproduction proposed in “A benchmark-based evaluation of search-based crash reproduction” (<https://doi.org/10.1007/s10664-019-09762-1>).

Automated Type Inference for Python

Mentor: Prof. Caroline Lemieux

University of British Columbia

January 2023 - Current

- Infer types for variables in Python projects without type annotations.
- Utilizes a novel attribute-centric type inference approach: collects attributes variables should provide, and uses the attributes to infer types via TF-IDF type queries.

Effective Stack Wear Leveling for NVM

Mentor: Prof. Qingan Li

Wuhan University

August 2021 - August 2022

- Increase the lifespan of non-volatile memory with limited write durability by converting wear-heavy loops in programs into recursive functions.
- Implemented as an LLVM pass that is applicable to a large variety of hardware architectures, operating systems, and programming languages.

Community Detection Using Social Network and Trajectories

Mentor: Prof. Yuanyuan Zhu

Wuhan University

September 2019 - June 2021

- Given a social network and user trajectory dataset, find communities of users with both social cohesiveness and trajectory similarity.

Projects

Dynamically Inspecting Python Bytecode

University of British Columbia

CPSC 507 Software Engineering

October 2022 - December 2022

- Implemented a modified Python interpreter allowing user-defined callbacks to inspect Python bytecode during the execution of a program.
- Ideal for building dynamic program analysis tools for Python.
- **Technical Skills:** Python, Python C-API.
- **Soft Skills:** Reading Large Code Bases, Debugging, Presentation Skills, Report Writing.

Conference Control System Based on Gesture Recognition

Wuhan University

The 12th Service Outsourcing Innovation and Entrepreneurship Competition for Chinese College

January 2021 - May 2021

Students

- Capture video from a computer's webcam, recognize 5 hand gestures, and use the recognized gestures to control a computer.
- Designed a novel, declarative pipeline parallelism framework for enhanced multicore performance.
- **Technical Skills:** Computer Vision, Deep Learning, Parallel and Concurrent Programming, PyQt5 GUI Programming.
- **Soft Skills:** Teamwork, Modeling, Debugging, Presentation Skills, Report Writing.

Effective Search of Gadgets in the "Attack Lab" Experiment

Wuhan University

Computer Systems: A Programmer's Perspective

December 2020

- Find a set of "gadgets" within a binary that could be exploited to complete a given task.
- Designed a scheme to store gadgets within a Pandas DataFrame, enabling the use of Exploratory Data Analysis to rapidly query all possible gadgets.
- **Technical Skills:** Python with Pandas.
- **Soft Skills:** Modeling, Exploratory Data Analysis, Presentation Skills, Report Writing.

Traffic Scene Smart App

Wuhan University

The 9th China Software Cup

April 2020 - August 2020

- A computer vision based application that can identify motor vehicles, non motor vehicles, pedestrians and the license plates, brands, orientations and colors of motor vehicles, monitor traffic flow, as well as record traffic violations.
- **Technical Skills:** Computer Vision, Deep Learning, Parallel and Concurrent Programming, PyQt5 GUI Programming.
- **Soft Skills:** Teamwork, Modeling, Presentation Skills, Report Writing.

Service

Research Assistant

Wuhan University

Software Practices Lab

January 2023 - Present

Conducted research with Prof. Caroline Lemieux on Automated Type Inference for Python and Stack-based Crash Reproduction.

Teaching Assistant

Wuhan University

CPSC 410 Advanced Software Engineering

September 2022 - December 2022

Gave in-depth feedback and advice regarding Static and Dynamic Program Analysis projects the students were doing as course projects.

Freshman Mentor

Wuhan University

School of Computer Science

September 2020 - June 2021

Introduced freshmen students of Class 10, Grade 2020 to university life and Computer Science, actively answering any questions they had.

Deputy Minister

Wuhan University

Wuhan University IBM Student Club

June 2020 - June 2022

Group Leader

Wuhan University

Technology Group, Wuhan University Microsoft Club

August 2020 - June 2022

Publicity Committee

Wuhan University

Class of Excellent Engineers of Software Engineering, School of Computer Science

September 2018 - June 2022

Honors

- 2021 **2020-2021 Annual Advanced Individual of Social Work**, School of Computer Science, Wuhan University
- 2021 **2020-2021 Annual Outstanding Student**, Wuhan University
- 2020 **2019-2020 Annual Advanced Individual of Social Work**, Wuhan University
- 2020 **2019-2020 Annual Merit Student**, Wuhan University
- 2019 **2018-2019 Annual Merit Student**, Wuhan University

Scholarships

- 2021 **2020-2021 Annual Outstanding Student Scholarship**, Wuhan University
2020 **2019-2020 Annual Outstanding Student Scholarship**, Wuhan University
2019 **2018-2019 Annual Outstanding Student Scholarship**, Wuhan University

Awards

- 2021 **Third Prize**, The 12th Service Outsourcing Innovation and Entrepreneurship Competition for Chinese College Students
2020 **Second Prize**, The 9th China Software Cup

Skills

- Programming** Skilled at C++, Python, Shell, learning OCaml.
 Software Adobe software (Photoshop, Illustrator, Premiere, etc.), Office software (Word, PowerPoint, Excel)
 Soft Skills Teamwork, Leadership, Deriving innovative solutions to complex problems, Communication, Documentation, Presentation.

Languages

- English** Professional proficiency (TOEFL: 116/120, GRE: 335/340)
Chinese Native proficiency