

# 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
- Courses TA'ed: CPSC 410 Advanced Software Engineering

### 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

### ISSTA/ECOOP 2023

Student Volunteer

University of Washington

July 17 - 21, 2023

### PNW PLSE 2023 Workshop

Presenter

University of Washington

May 9, 2023

Presented poster and lightning talk on "Automated Type Inference in Python." Link:

<https://sites.google.com/cs.washington.edu/pnwplseworkshop/pnw-plse-2023>

## Research Experience

### Type Inference for Python

Mentor: Prof. Caroline Lemieux

University of British Columbia

January 2023 - Current

- Infer types for variables in Python code with little or no type annotations.
- Focuses on attributes (fields and methods) provided by types, rather than directly inferring concrete types.

### 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

CPSC 507 Software Engineering

University of British Columbia

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.
- **Technical Skills:** Computer Vision, Deep Learning, 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

- Wrote a Python function to disassemble the executable and enumerate all gadgets within the executable.
- Designed a scheme to store gadgets within a Pandas Dataframe to enable rapid queries.
- Used Exploratory Data Analysis to find all possible gadgets that could be exploited to complete a given task.
- **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, Concurrent Programming, PyQt5 GUI Programming.
- **Soft Skills:** Teamwork, Modeling, Presentation Skills, Report Writing.

## Scholarships

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|------|----------------------------------------------------------------------------|
| 2021 | <b>2020-2021 Annual Outstanding Student Scholarship</b> , Wuhan University |
| 2020 | <b>2019-2020 Annual Outstanding Student Scholarship</b> , Wuhan University |
| 2019 | <b>2018-2019 Annual Outstanding Student Scholarship</b> , Wuhan University |

## Honors

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|------|-----------------------------------------------------------------------------------------------------------|
| 2021 | <b>2020-2021 Annual Advanced Individual of Social Work</b> , School of Computer Science, Wuhan University |
| 2021 | <b>2020-2021 Annual Outstanding Student</b> , Wuhan University                                            |
| 2020 | <b>2019-2020 Annual Advanced Individual of Social Work</b> , Wuhan University                             |
| 2020 | <b>2019-2020 Annual Merit Student</b> , Wuhan University                                                  |
| 2019 | <b>2018-2019 Annual Merit Student</b> , Wuhan University                                                  |

## Awards

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

## Skills

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|--------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Programming</b>       | C++ (STL, Boost, Template Metaprogramming), Python (z3, multiprocessing, NumPy, Pandas, Matplotlib), Shell. |
| <b>Operating Systems</b> | Linux, macOS, Windows.                                                                                      |
| <b>Software</b>          | Adobe software (Photoshop, Illustrator, Premiere, etc.), Office software (Word, PowerPoint, Excel)          |
| <b>Soft Skills</b>       | Teamwork, Planning, Modeling, Problem-solving, Documentation, Communication, Presentation.                  |

## Languages

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|----------------|---------------------------------------------------------|
| <b>English</b> | Professional proficiency (TOEFL: 116/120, GRE: 335/340) |
| <b>Chinese</b> | Native proficiency                                      |