

Zhiyi Pan

curriculum vitae

+1 (734) 881 5522

✉ zhiyipan@umich.edu

📍 PPER

Education

- 2019-2020 **Bachelor**, *Computer Science Engineering*, University of Michigan, 3.84.
Dual Degree Program
Selected coursework: Advanced Compilers; Program Synthesis; Introduction to Operating Systems; Compiler Construction; Programming Languages
- 2017-2019 **Bachelor**, *Electrical and Computer Engineering*, Shanghai Jiaotong University, 3.55.

Research Interests

Programming languages, compiler and software engineering

Research

- Nov. 2019 - present **Research assistant**, *prof. Cyrus Omar*, University of Michigan, Future of Programming Lab, Ann Arbor.
Programming Language
- Worked on a paper for a gradual bidirectional typing inference system, type hole inference.
 - Developed undo/redo and history recording features for Hazel, a live functional programming environment featuring typed holes.
 - Designed and implemented a history panel, which was used for EECS 490 teaching work in UM.
- May 2020 - **Research assistant**, *prof. Scott Mahlke*, University of Michigan.
July 2020 Compiler Optimization
- Learnt and wrote optimization path by LLVM.
 - Implemented genetic algorithm to find optimized combination of flags for gcc.

Academic Experience

- 2020 Fall **Teaching assistant**, *EECS 490 Programming Languages*, University of Michigan.
TBD!!!!!!!!!!!!
- 250-student upper level technical elective course
 - duties including holding office hours and lab teaching
- August 2020 **Author**, *ICFP 2020*, Student Research Competition Track.
Type Hole Inference
- Won bronze medal in the student research competition.
 - Submitted an extended abstract, *Type Hole Inference*.
 - Participated in the poster session and communicated with ICFPers.
 - Made a presentation on the final talk session.

Awards

- April 2019 **Champion**, *12th Annual VEX U Robot Skills Challenge World Championship*, The Robotics Education & Competition Foundation, Louisville.
Over 30,000 people including more than 1,650 teams from 40 nations participated.
 - o Designed and constructed over 5 versions of robots for competitions with other 8 teammates.
 - o Wrote daily work log and engineering sheets for the team.
- April 2019 **Second Place**, *VEX U Robot World Championship*, The Robotics Education & Competition Foundation, Louisville.
- February 2019 **Champion**, *VEX Robotics Asia Open*, Ningbo, Zhejiang.
- November 2018 **Robot Awards**, *Summer Design Expo Best Technology Award*, UM-SJTU JI, Shanghai.
Built a remote-controlled glass wall cleaning robot
- 2017-2018 **Scholarship**, *Undergraduate Excellent Scholarship*, Shanghai Jiao Tong University, Shanghai.

Projects

- 2020 Fall **Course Project**, EECS 583 Advanced Compiler.
TBD!!!!
- 2020 Fall **Course Research Project**, EECS 598 Program Synthesis: Techniques and Applications.
TBD!!!!
- 2019 Winter **Course Project**, *Compiler for Decaf*, EECS 483 Compiler Construction.
Implemented and optimized a compiler for Decaf (a strongly-typed, object-oriented language with support for inheritance and encapsulation), written in C++ and compiled Decaf program into MIPS assembly program.
 - o Implemented a full-stack compiler from lexical analyzing to code generation with clear static, link and run-time error reporting.
 - o Optimized compiler by register allocation improvement, dead code elimination, constant folding, subexpression elimination, constant propagation and forward copy propagation.
- 2019 Winter **Course Project**, *Network File System*, EECS 482 Operating System.
Implemented a file system featuring encryption, authentication, failure tolerance and concurrency.
- February **Online Visual Novel**, *SJTU Network and Information Organization*, Shanghai.
- 2019 - May 2019 **Implemented a visual novel** featuring multiple story lines and endings, shopping store, archiving, achievement, HP systems.
 - o Designed and built front-end pages (Html/Css/Js).
 - o Developed the back-end by Django, created database model and deployed it in the cloud server (Ubuntu).
 - o Revised it into a light framework and released on github.

Programming Languages

Functional OCaml, ReasonML

Imperative C, C++

Scripting Python, Javascript, Shell

Others LaTeX, HTML/CSS, Matlab, Mathematica

———— Languages

TBD!!!!