

Vanessa McHale

560 W Fullerton Pkwy. Chicago, IL 60614 | (608) 338-7987 | vamchale@gmail.com

Objective

- Work on interesting problems in programming languages and logic; be competent in my work.

Education

2013-2017 | UNIVERSITY OF WISCONSIN-MADISON

- Major: Mathematics
- Related coursework: Abstract Algebra, Set Theory, Foundations of Mathematics, Probability Theory, Algebraic Topology

Projects

KEMPE

- I wrote a compiler for a stack-based language targeting x64 and Aarch64 assembly, with a linear register allocator and maximal munch for instruction selection.

DICKINSON

- I wrote a language for generative literature in Haskell, featuring a type checker and pattern match exhaustiveness checker and Alex/Happy frontend.

PERMUTATIONS LIBRARY

- I wrote a library for type-safe permutations in Idris, including a pretty-printer that used cycle notation.

Experience

FUNCTIONAL ENGINEER | QBAYLOGIC | APRIL 2022 -

- Worked on a Haskell-to-hardware compiler, contributed upstream to GHC, wrote circuits using our in-house compiler.

SOFTWARE ENGINEER | BITNOMIAL, INC. | NOVEMBER 2019 - FEBRUARY 2022

- Wrote Servant for a web service, wrote code to interact with databases that connect to our services. Wrote services to handle data streams from the exchange.

COMPILER ENGINEER | IOHK | APRIL 2018 - JULY 2019

- Worked on an interpreter for a typed, functional blockchain language. I wrote a typechecker and parser and I benchmarked and profiled the interpreter for security purposes. I also wrote and debugged test cases in the IR.

COMPILER ENGINEER | RECONFIGURE IO | JUNE 2017 - JANUARY 2018

- Worked on a Go-to-Verilog compiler. I implemented constant folding, fixed bugs.