

ETHAN MCCARTHY

 ethmcc.github.io

 in/ethmcc

 ethmcc

EMPLOYMENT

Software Development Intern

 2020 – 2021

 Skillion Inc.

 Bethlehem, Pennsylvania

Developed full-stack web (React) and Android apps for an e-bike platform. Led development of “Tours” software project. AWS IoT platform. JUnit testing. Scrum/Agile development with Jira.

Visiting Assistant Professor

 2018 – 2020

University of Florida

 Gainesville, Florida

Developed lecture video sequence with interactive online animations and demonstrations. Contributed to in-house textbooks. Converted courses for online-delivery. Led research seminars and conferences.

Graduate Teaching Assistant

 2012 – 2018

University of Wisconsin–Madison

 Madison, Wisconsin

Led recitations in undergraduate mathematics courses. Developed curriculum content. Led and trained other teaching assistants.

Undergraduate Teaching Assistant

 2010–2012

Michigan State University

 East Lansing, Michigan

Led the recitation sections for a terminal undergraduate math course. Assisted in tutoring center.

PERSONAL PROJECTS

Full descriptions of my programming portfolio projects are available at this link: <https://ethmcc.github.io/projects/>

Weather Journal

 ethmcc.github.io/weather

- Native Android application written in Java

Allows users to keep a journal on weather conditions. Interfaces with location and file system, external web weather API, SQLite database.

Turing Machine Simulator

 ethmcc.github.io/turing

- Progressive web app built with React, JavaScript

Simulator with source code parser. Allows users to write their own machines using a custom syntax. Deployed in an educational setting.

Chess Sudoku Solver

 ethmcc.github.io/sudoku

- Python package implementing efficient combinatorial algorithms
- Fast variant Sudoku and combinatorial puzzle solving library using an implementation of Donald Knuth’s DLX algorithm.

Pomoduino timer

 ethmcc.github.io/pomoduino

- A time management clock for Arduino-compatible microcontrollers
- Pomodoro timer built from a microcontroller and a 16-pin LCD. Programmed in C++ on the Arduino platform.

EDUCATION

Ph.D. Mathematics

UW–Madison

 2018

 Madison, Wisconsin

Supervisor: Prof. Joseph S. Miller

Research topics: Theory of computation, computability and complexity, computer science, algorithmic information theory and randomness.

M.A. Mathematics

UW–Madison

 2014

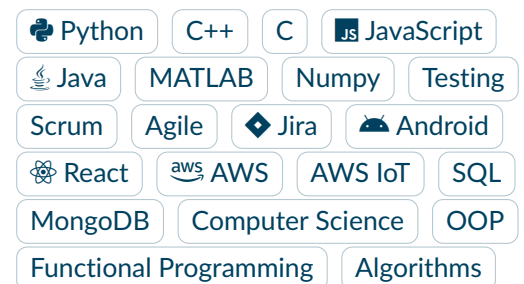
 Madison, Wisconsin

Specialty topic: Martin–Löf-random paths of Brownian motion.

OTHER EXPERIENCE

- *Art of Problem Solving*. “Halper” and Grader. *Intro to Programming with Python*, *Intermediate Programming with Python*.

TECHNICAL SKILLS



SELECTED PUBLICATIONS

- *Pointwise complexity of the derivative of a computable function*. To appear in Arch. Math. Log. (2021)
- *Cototal enumeration degrees and their applications to effective mathematics*. Proc. Am. Math. Soc. 146 (2018), 3541–3552.

SELECTED AWARDS

- Graduate Research Fellowship, NSF, 2014
- Herbert T. Graham Scholar, 2011 & 2012
- Math in Moscow Scholarship, AMS, 2012
- Herzog Mathematical Competition, 1st Prize, 2011

OTHER INTERESTS

- **Sailing:** Instructor at UW Hoofers student sailing program.