

Hayden Coffey

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EDUCATION

University of Wisconsin-Madison Pursuing Ph.D. in Computer Science, Advisor: Michael Swift	Madison, Wisconsin 2021–Present
University of Tennessee, Knoxville M.S. in Computer Science, Advisor: Michael Jantz, GPA: 3.97/4.00	Knoxville, Tennessee 2019–2021
University of Tennessee, Knoxville B.S. in Computer Science, <i>summa cum laude</i> , GPA: 3.95/4.00	Knoxville, Tennessee 2015–2019

EXPERIENCE

University of Wisconsin-Madison Graduate Research Assistant at SCAIL	Madison, Wisconsin Fall 2021–Present
<ul style="list-style-type: none">– Software-Based Performance Instrumentation using LLVM– Currently working under the direction of Dr. Michael Swift on a LLVM-based IR/MIR block profiler to provide instruction mix and bandwidth statistics for data intensive applications on RISC-V PIM/PNM platforms which may lack hardware performance counter support.	
University of Tennessee Graduate Research Assistant at CORSys	Knoxville, Tennessee Fall 2019–Summer 2021
<ul style="list-style-type: none">– Automatic Cold Data Compression Using Zswap– Worked under the direction of Dr. Michael R. Jantz on a system that utilizes a modified Zswap program to automatically mark, compress, and manage cold data.	
University of Tennessee Undergraduate Research Assistant	Knoxville, Tennessee Fall 2018–Spring 2019
<ul style="list-style-type: none">– Supporting Code Comprehension via Annotations: Right Information at the Right Time and Place– Worked under the direction of Dr. Austin Z. Henley. Collaboration with Oregon State University on the development of an Electron based IDE written in Typescript. Aimed to visually represent software projects with files being cards that could be moved/stacked alongside annotations that could be used to detail project designs.	
SAIC Software Engineer Intern	Huntsville, Alabama Summer 2019
<ul style="list-style-type: none">– MEDUSA Project– Worked in Java. Focus of internship was refactoring an existing code base to use new software models. Received secret security clearance.	
University of Tennessee Undergraduate Research Assistant	Knoxville, Tennessee Fall 2016–Spring 2017
<ul style="list-style-type: none">– Study of CDC42– Assisted in research on the protein CDC42 under the direction of Dr. Maitreyi Das.	

PUBLICATIONS

- [1] M. Adeli, N. Nelson, S. Chattopadhyay, **H. Coffey**, A. Henley, and A. Sarma, “Supporting Code Comprehension via Annotations: Right Information at the Right Time and Place”, in *2020 VL/HCC*, Aug. 2020.

TEACHING

- **Teaching Assistant** at University of Tennessee, Knoxville Spring 2021
Data Structures and Algorithms II (COSC 302)
- **Head Teaching Assistant** at University of Tennessee, Knoxville Fall 2020
Computer Architecture (COSC 530)
- **Head Teaching Assistant** at University of Tennessee, Knoxville Fall 2019–Summer 2020
Computer Organization (COSC 130)
- **Supplementary Instruction Leader** at University of Tennessee, Knoxville Fall 2018
Introduction to Computer Science (COSC 102)

SKILLS

- **Programming Languages:** C | C++ | Python | Rust | Julia | Haskell | Java | JavaScript | TypeScript
- **Software:** Git | SVN | Open MPI | OpenMP | CUDA | SDL | Unity | Godot | Vim
- **Operating Systems:** Linux | Windows

PROJECTS

See full list of projects on github.com/hcoffey1

- **Quarry (Python, 2022):** Tool for estimating quantum circuit fidelity across a variety of IBM platforms using machine learning and other fidelity estimation methods.
- **Duck Compiler (Rust, 2022)** X86-64 compiler for the Duck Duck Goose esoteric programming language.
- **Worley/Perlin (C++/Rust, SDL, 2020/2022)** Worley and Perlin noise generators/visualizers.

SCHOLARSHIPS AND AWARDS

- Tennessee HOPE Scholarship - Merit Scholarship Recipient
- The University of Tennessee - Volunteer Scholarship Recipient

EXTRACURRICULAR ACTIVITIES

- Tau Beta Pi 2018–Current
Engineering Honors Organization.
- UTK Machine Learning Club 2018–2021
Executive board member of University of Tennessee machine learning club.
- University of Tennessee, Chancellor’s Honors Program 2015–2019
Liberal arts honors program with focuses on volunteer service and research.
- Engineering in London Summer 2018
University of Tennessee study abroad program in London, England.

- Alternative Winter Break
University of Tennessee volunteer program in Havana, Cuba.
- Volunteer Service
100+ registered service hours at the University of Tennessee, Knoxville.
- Eagle Scout
Boy Scouts of America.