

MICHAEL J. WILKINS

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Research Interests

Computer architecture, parallel and distributed systems, memory systems, emerging architectures such as reconfigurable and quantum computing

Education

Northwestern University, Evanston, IL *Expected: May 2024*

Ph.D. Computer Engineering

Co-Advised by Nikos Hardavellas and Peter Dinda

Rose-Hulman Institute of Technology, Terre Haute, IN *May 2019*

B.S. Computer Engineering

GPA: 3.93

Research Experience

Evaluation of Non-Cache Coherent Systems *2019-Present*

Northwestern University

- Examined the upper bound of efficiency improvements from disabling cache coherent in a distributed multiprocessor system
- Modified the ZSim architectural simulator and custom benchmarks to quantify coherency delays in false sharing and true sharing scenarios

Developing Computational Architectures (DeCA) *2017-2019*

Rose-Hulman Institute of Technology

- Developed DeCA: a platform that enables application researchers to prototype FPGA accelerator designs through industry-standard tools and custom software
 - Created a custom FPGA accelerator using DeCA for a neuroscience application to showcase the platform's capabilities; achieved 1.5x speedup
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Publications

Michael Wilkins, Corie Ewoldt, Josh Heidecker, Cooper Winans, Daniel W. Chang, Mario Simoni
“DeCA: Developing Computational Architectures through FPGA Simulation”, (*in submission to FPGA'20*)

Industry Experience

National Instruments, Austin, TX *2018 May-August*

Engineering Leadership Program (ELP) Intern

- Engaged with technical leaders through field presentations to multiple companies in the Seattle area
- Assisted customers to design and troubleshoot data-acquisition applications using NI platforms

Flexware Innovation, Fishers, IN *2017 June-August*

Trailblazer Intern

- Designed an innovative RFID tracking solution to repair a malfunctioning inventory locating system
- Produced a full-stack BI database solution analyzing internal employee and revenue data

Power Solutions International, Wood Dale, IL

2016 June-August

Director of Tool Services

- Organized and managed the company's inventory of CNC machining tools, valued at more than \$500,000
 - Trained company technicians on new processes and managed tool services employees
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Skills & Abilities

Simulators/Tools: ZSim, gem5, Xilinx Vivado, Xilinx ISE, Quartus II, Modelsim, Multisim

Software Languages: LabVIEW, Java, C, C#, Python, SQL

Hardware Description Languages: Chisel, VHDL, Verilog, SPICE

Leadership

Pi Kappa Alpha Fraternity Iota Delta Chapter

2017-2019

Treasurer

- Drafted and managed a budget of over \$400,000 across two school years while completing initiatives to increase payment collection and digitize fiduciary practices

Rose-Hulman Bowling Club

2016-2019

President

- Restructured the club's leadership and daily operation; increased membership by 300%

Mooseheart Tutoring Program

2014-2016

Founder and President

- Began program to tutor orphaned students at Mooseheart Child City; after 3 years of growth, had 45 students and 24 tutors meeting twice a week
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Honors & Awards

Cabell Fellowship

2019-2020

- Awarded to the top 10 1st year Ph.D. students across all engineering majors

Department Choice Award

2019

- Awarded to the best senior research project

Embedded Systems Design Competition Champion

2018

Freshman ECE Design Competition Champion

2016

Dean's List (All Semesters)

2016-2019

Class of 1940 Endowed Scholarship

2016-2019

National AP Scholar

2016

Illinois State Scholar

2016

36 ACT Certificate

2015

Societies & Activities

Institute of Electrical and Electronics Engineers (IEEE)

2016-Present

Eta Kappa Nu Honor Society

2017-2019

Blue Key Honor Society

2017-2019

Alpha Lambda Delta Honor Society

2017-2018

Community Service Chapel Street Church of Geneva Nursery, Habitat for Humanity
