

John Kloosterman

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Research Interests

Computer science and engineering education, compilers, computer architecture, throughput processor software and hardware architecture

Education

University of Michigan, Ann Arbor, MI

Ph.D. Computer Science and Engineering, 2018; M.S. 2015

Thesis: Data Resource Management in Throughput Processors

Calvin University, Grand Rapids, MI

B.S., Computer Science with honors, Philosophy, 2013

Teaching

Courses

Winter 2022	EECS 485: Web Systems	480 students
Fall 2021	EECS 183: Elementary Programming Concepts	1150 students
Winter 2020	EECS 485: Web Systems	450 students
Fall 2020	EECS 183: Elementary Programming Concepts	1110 students
Spring 2020	EECS 280: Programming and Introductory Data Structures	180 students
Winter 2020	EECS 485: Web Systems	440 students
Fall 2019	EECS 183: Elementary Programming Concepts	1025 students
Spring 2019	EECS 280: Programming and Introductory Data Structures	130 students
Winter 2019	EECS 183: Elementary Programming Concepts	700 students
Fall 2019	EECS 183: Elementary Programming Concepts	1050 students
Winter 2017	EECS 280: Programming and Introductory Data Structures	950 students

Student Projects

2020-present	Developing Comprehensive Studies Program programming for EECS 183 <i>Jule Schatz, Nel Escher, and others, in collaboration with Foundational Course Initiative</i>
2021-2022	Investigating the Opioid Epidemic with Data Science (UROP) <i>Evani Dalal, Oliver Gao</i>
2018-19	Reducing Machine Learning Cost for Web Applications (UROP) <i>Dannin Ferrara, Latifur Khan</i>

2019, 2020 Multidisciplinary Design Project (with Ally Financial, Toyota)
Faculty mentor for two year-long student project teams in collaboration with industry

Grants

\$1250 F22 LEO Professional Development Fund
\$1000 F20 LEO Inclusive Teaching Grant for lower-stakes assessment design
\$30K 2019-2022 Foundational Course Initiative support for EECS 183
\$5991 F19 CRLT Faculty Development Fund (co-PI) for developing Lobster online active learning coding tool
\$500 F19 LEO Inclusive Teaching Grant for TA support during active learning exercises
\$1000 W18 CRLT inclusive teaching support
\$1000 F18 UROP Supplemental Funding for undergraduate research
\$1000 F18 LEO Professional Development Fund
\$1925 F18 CRLT Lecturer's Professional Development Fund

Awards

2019-20 Michigan Housing Honored Instructor
2018-19 Michigan Housing Honored Instructor

Seminars/Panels

Aug. 2022 CS Kickstart (incoming CS first year women) speaker
AY 2021-22 Speaker for Comprehensive Studies Program and M-STEM panels on computing
Aug. 2021 CS Kickstart (incoming CS first year women) speaker
May 2021 Preparing Future Faculty lecturer roundtable
Feb. 2021 Computing CARES panelist on remote learning
Nov. 2021 CSE Undergraduate Town Hall panelist
Sept. 2020 Computing CARES panelist on remote learning
Aug. 2020 CS Kickstart (incoming CS first year women) speaker on motivation
May 2020 CRLT-Engin Symposium on Engineering Teaching and Learning panelist, "Moving from Emergency to Enhanced Remote Teaching"
May 2020 Preparing Future Faculty lecturer roundtable
Aug. 2019 CS Kickstart (incoming CS first-year women) speaker on success in large courses
2019-2022 University of Michigan Foundational Course Initiative (EECS 183)
June 2019 Preparing Future Faculty lecturer roundtable
May 2019 CRLT Foundational Course Initiative Course Design Institute for EECS 183
May 2019 CRLT: Enriching Scholarship, "Using Analytics to Inform Instruction" panel on using lecture capture analytics for course design
Dec. 2018 Teaching Engineering (ENGR 580) faculty panel
Fall 2018 CRLT-Engineering Inclusive Teaching circle

Collaborations

2019-2022 Foundational Course Initiative for EECS 183 (with CRLT)

2019-present SEISMIC in-lecture backchannels (PI: Perry Samson)

Publications and Patents

Jule Schatz, Zahra Makki, Elizabeth Mann Levesque, Heather Rypkema, **John Kloosterman**, “Creating a Community-Focused Lab Section in a Large Computer Science Course”, ASEE General Conference, Minorities in Engineering Division, June 2022

Jule Schatz, Zahra Makki, Elizabeth Mann Levesque, Heather Rypkema, **John Kloosterman**, Poster: “Creating a Community-Focused Lab Section in a Large Computer Science Course”, University of Michigan DEI Mini-Conference, April 2022. **Best Poster Award.**

David Ke Hong, **John Kloosterman**, Yuqi Jin, Yulong Cao, Qi Alfred Chen, Scott Mahlke, Z. Morley Mao, “AVGuardian: Detecting and Mitigating Publish-Subscribe Overprivilege for Autonomous Vehicle Systems”, IEEE European Symposium on Security and Privacy (Euro S&P) 2020 (15% acceptance rate)

John Kloosterman, Jonathan Beaumont, Davoud Anoushe Jamshidi, Jonathan Bailey, Trevor Mudge, Scott Mahlke, “Apparatus and method for processing thread groups”, US patent 15782098, published 3/10/2020

Jonathan Bailey, **John Kloosterman**, Scott Mahlke, “Scratch That (But Cache This): A Hybrid Register Cache / Scratchpad for GPUs”, International Conference on Compilers, Architectures, and Synthesis for Embedded Systems (CASES) 2018 (24% acceptance rate)

John Kloosterman, Jonathan Beaumont, D. Anoushe Jamshidi, Jonathan Bailey, Trevor Mudge, Scott Mahlke, “RegLess: Just-in-Time Operand Staging for GPUs”, International Symposium on Microarchitecture (MICRO) 2017 (19% acceptance rate)

John Kloosterman, Jonathan Beaumont, Michael Wollman, Ankit Sethia, Ron Dreslinski, Trevor Mudge, Scott Mahlke, “WarpPool: Sharing Requests with Inter-Warp Coalescing for Throughput Processors”, International Symposium on Microarchitecture (MICRO) 2015 (22% acceptance rate)

Departmental Service

- Data Science-Engineering Chief Program Advisor, 2020-present
- Data science program committee, 2020-present (chair Winter 2021)
- Undergraduate Program Advisors Group in Engineering, 2020-present

- CSE undergraduate advising, 2018-2020
- CSE undergraduates awards committee, 2019-20
- Computer Science program committee, 2018-19

Work Experience

University of Michigan, Lecturer IV, Computer Science and Engineering 2022 – present

University of Michigan, Lecturer IV, Computer Science and Engineering 2018 – 2022

- Teach and develop computer science courses and curriculum
- Course and career advising for undergraduate students
- Mentor graduate and undergraduate teaching assistants

University of Michigan, Research Fellow 2018

- Project: “Security Assurance through Protocol Customization: Novel Program Analysis and Machine Learning based Automation”
- PIs: Scott Mahlke, Z. Morley Mao

Google, Software Engineering Intern 2015

- Designed and implemented a high-performance parallel C++ memory profiling tool used across many Google projects.

External Service

- Reviewer, SIGCSE 2018, 2019, 2020
- Reviewer, ACM Transactions on Architecture and Code Optimization (TACO), 2019
- Research Policy Committee, University of Michigan, 2015-16, 2016-17