

WILLIAM ARTHUR

Curriculum Vitae

Research Interests

Computer security, computer architecture, compilers, system security, network security, hardware/software co-design, software engineering and test, engineering education.

Education

University of Michigan – Ann Arbor

Ph.D. Computer Science and Engineering

Thesis Title: Control-Flow Security

Advisor: Todd Austin

University of Michigan – Ann Arbor

M.S. Computer Science and Engineering

GPA: 3.96 / 4.0

University of Michigan – Flint

B.S. Computer Science with High Honors

GPA: 4.0 / 4.0

Teaching

Courses:

Fall 2014 - Winter 2021	EECS 183: Elementary Programming Concepts	650-1000 <i>Students</i>
Winter 2014 – Fall 2020	EECS 370: Introduction to Computer Organization	350-650 <i>Students</i>
Spring 2015	ECEG 6514: Fault-Tolerant Computing (Visiting Faculty, Addis Ababa Institute of Technology, Ethiopia)	3 <i>Students</i>

Seminars:

Fall 2015	Center for Research on Learning and Teaching in Engineering (CRLT-Engineering) Seminar: Generating an Active Learning Plan CRLT-Engineering Instructional Aide Teaching Orientation (EIATO) Seminar: Handling Office Hours CRLT-Engineering Engineering Graduate Student Instructor Teaching Orientation (EGSITO) Seminar: Handling Office Hours
Winter 2015	CRLT-Engineering Seminar: Maximizing Student Learning During Office Hours CRLT EIATO Seminar: Handling Office Hours

Service:

2019-Present	Chief Program Advisor – CS-LSA Computer Science Program Committee
2016-18	Academic Advisor, CS-Engineering
2018	Computer Science and Engineering Committee on Diversity and Outreach, co-chair Computer Science and Engineering Committee liaison for Diversity, Equity, and Inclusion to the College of Engineering.

- 2018 Multidisciplinary Design Program: Faculty Mentor – Union Pacific Partner-Sponsored Project student engineering team.
- 2016-17 Multidisciplinary Design Program: Faculty Mentor – Guardian Industries Partner-Sponsored Project student engineering team.
- 2015 CRLT-Engineering: Engineering Teaching Consultant
 CRLT-Engineering: Teaching Orientation Practice Teaching Session Facilitator
 CRLT-Engineering: Engineering Teaching Consultant
 CRLT-Engineering: Teaching Orientation Experienced Instructor Panel
 CRLT-Engineering: Teaching Orientation Practice Teaching Session Facilitator
- 2014 CRLT-Engineering: Engineering Teaching Consultant
 CRLT-Engineering: Teaching Orientation Practice Teaching Session Facilitator

Publications

William Arthur, Sahil Madeka, Reetuparna Das, Todd Austin, “Locking Down Insecure Indirection with Hardware-Based Control-Data Isolation,” in the Proceedings of the 2015 International Symposium on Microarchitecture (MICRO), December 2015.

William Arthur, Ben Mehne, Reetuparna Das, Todd Austin, “Getting in Control of Your Control Flow with Control-Data Isolation,” in the Proceedings of the 2015 International Symposium on Code Generation and Optimization (CGO), February 2015.

William Arthur, Biruk Mammo, Ricardo Rodriguez, Todd Austin, Valeria Bertacco, “Schnauzer: Scalable Profiling for Likely Security Bug Sites,” in the Proceedings of the 2013 International Symposium on Code Generation and Optimization (CGO), February 2013.

Michael E. Farmer, **William Arthur**, “Study of the Phenomenology of DDOS Network Attacks in Phase Space,” in the Proceedings of the International Conference on Security and Cryptography (SECRYPT), July 2011.

William Arthur, “Control-Flow Security,” Ph.D. Thesis, EECS Department – CSE, University of Michigan, Ann Arbor, May 2016.

Work Experience

University of Michigan, Lecturer IV **2020 – Present**

- Teaching and course development in Computer Science.
- Chief Program Advisor – Computer Science – College of Literature, Science, and the Arts

University of Michigan, Lecturer III **2016 – 2020**

- Teaching and course development in Computer Science.
- Committee on Diversity and Outreach – co-chair
- Department Liaison for Diversity, Equity, and Inclusion to the College of Engineering

University of Michigan, Graduate Student Instructor **2014 – 2016**

- EECS 183: Elementary Programming Concepts – Primary Instructor

2260 Hayward Street – Ann Arbor, MI 48109

3640 Bob and Betty Beyster

warthur@umich.edu

- EECS 183: Elementary Programming Concepts – Graduate Student Instructor
- EECS 370: Intro to Computer Organization – Graduate Student Instructor
- Taught undergraduate students through lecture, discussion, and office hours.
- Performed administrative duties including creating course content, course, and staff team management.

University of Michigan, Engineering Teaching Consultant **2014 – 2016**

- Provided one-on-one consultations with individual Graduate Student Instructors and Undergraduate Instructional Aides on teaching-related issues.
- Performed classroom observations and feedback sessions for Graduate Student Instructors and Undergraduate Instructional Aides.

Addis Ababa Institute of Technology, Ethiopia, Visiting Faculty **2015**

- ECEG 6514: Fault-Tolerant Computing
- Administered course for AAiT Ph.D. cohort

University of Michigan, Graduate Student Research Assistant **2010 – 2016**

- Performed research activities in the areas of computer security, computer architecture, compilers, hardware/software co-design, and software test.
- Mentored undergraduate students in research through the Summer Undergraduate Research in Engineering program.

Self-Employed, State of Michigan Licensed Journeyman Electrician **2007 – 2010**

- Resolved crisis electrical maintenance issues from service calls.
- Performed power distribution wiring maintenance and construction activities.

Ford Motor Company, Journeyman Industrial Electrician **1993 – 2007**

- Conducted Test Engineering and management of test processes and equipment for automotive transmissions operations.
- Taught apprentice Electricians for the Ford Motor Company bona fide apprenticeship program.
- Performed software maintenance and troubleshooting of industrial control software and systems.

U.S. Manufacturing Corporation, Engineering Technician **1988 – 1993**

- Designed mechanical systems including gauging and material handling systems.
- Performed technical writing and production of technical documents.
- Performed various engineering tasks pertaining to waste treatment, industrial operations, and metallurgical testing.

Service

Served as external reviewer for the following conferences: ASPLOS '12, '13; CGO '13; DATE '12, '13, '16; DSN '14; HPCA '12, '14; ISCA '12, '13, '14; MICRO '11, '12; DAC '16;

Awards and Honors

College of Engineering Thomas M. Sawyer, Jr. Teaching Award.

Rackham Merit Fellowship, University of Michigan

Nominee, Maize and Blue Award, University of Michigan - Flint

Angell Scholar, University of Michigan - Flint

Three-time recipient Certificate of Appreciation Award, Ford Motor Company - Van Dyke T.P.

Product Quality Award, Ford Motor Company - Sterling Axle Assembly Plant