

Branden Ghena

Contact Information

Computer Science & Engineering
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Education

University of Michigan, Ann Arbor, Ann Arbor, Michigan (2013–Present)
PhD Candidate — Computer Science and Engineering
Advisor: Prabal Dutta

Michigan Technological University, Houghton, Michigan (2008–2013)
B.S. Computer Engineering & Electrical Engineering
GPA: 3.98 — Summa Cum Laude

Research Experience

University of Michigan, Ann Arbor, Ann Arbor, Michigan
Graduate Student Research Assistant, Computer Science and Engineering (2013–Present)

Michigan Technological University, Houghton, Michigan
Aerospace Enterprise, Designed and built a satellite in conjunction with the Air Force Research Lab with tentative launch in 2016 (2009–2013)
On-Board Data and Command Team Leader, Led team to complete computer hardware on the satellite, including thermal, wiring, and acceptance testing (2012–2013)
University Nanosatellite Program, first place finish in national competition (2011)

NSF Research Experience for Undergraduates, Research in the field of Hybrid-Electric Vehicles. Studied analytical model for a continuously variable transmission. Created procedure for vehicle coast-down testing (2011)

NASA Jet Propulsion Laboratory, Pasadena, California
Summer Internship, Created testing framework for ASIC processor designs including both hardware and software testing (2013)

Summer Internship, Designed and fabricated a computer board to interface a thruster with a satellite Command and Data Handling system (2012)

Jefferson High School, Monroe, Michigan
FIRST Robotics Competition, Team member (2004–2008)

Industry Experience

Hitachi Global Storage Technologies, Rochester, Minnesota
Test and Tools Co-op Student, Created hard drive testing tools using TCL and C++ languages. Worked with HDDs and SSDs as well as SATA and SCSI protocols (2010)

Fermi 2 Nuclear Power Plant, Monroe, Michigan
Summer Internship, Created plant configuration management documentation (2009)

Conference, Workshop, and Journal Publications

1. Bradford Campbell, Meghan Clark, Samuel DeBruin, **Branden Ghena**, Neal Jackson, Ye-Sheng Kuo, and Prabal Dutta. Perpetual sensing for the built environment. *IEEE Pervasive Computing*, 15(4):45–55, 2016
2. Samuel DeBruin, **Branden Ghena**, Ye-Sheng Kuo, and Prabal Dutta. Powerblade: A low-profile, true-power, plug-through energy meter. In *Proceedings of the 13th ACM Conference on Embedded Networked Sensor Systems*, SenSys '15. ACM, 2015. Acceptance Rate: 27 of 132
3. Amit Levy, Michael P Andersen, Bradford Campbell, David Culler, Prabal Dutta, **Branden Ghena**, Philip Levis, and Pat Pannuto. Ownership is theft: Experiences building an embedded OS in Rust. In *Proceedings of the 8th Workshop on Programming Languages and Operating Systems*, PLOS 2015. ACM, Oct 2015. Acceptance Rate: 7 of 16
4. Brad Campbell, **Branden Ghena**, and Prabal Dutta. Energy-harvesting thermoelectric sensing for unobtrusive water and appliance metering. In *Proceedings of the 2nd International Workshop on Energy Neutral Sensing Systems*, ENSys '14. ACM, November 2014. Acceptance Rate: 9 of 11
5. **Branden Ghena**, William Beyer, Allen Hillaker, Jonathan Pevarnek, and J. Alex Halderman. Green lights forever: Analyzing the security of traffic infrastructure. In *8th USENIX Workshop on Offensive Technologies*, WOOT '14. USENIX Association, August 2014. Acceptance Rate: 17 of 35

Demo Publications

1. Joshua Adkins, Bradford Campbell, **Branden Ghena**, Neal Jackson, Pat Pannuto, and Prabal Dutta. Demo abstract: The signpost network. In *Proceedings of the 14th ACM Conference on Embedded Networked Sensor Systems*, SenSys'16, November 2016
2. Bradford Campbell, **Branden Ghena**, Ye-Sheng Kuo, and Prabal Dutta. Demo abstract: Swarm gateway. In *Proceedings of the 3rd ACM International Conference on Systems for Energy-Efficient Built Environments*, BuildSys'16, November 2016
3. Samuel DeBruin, **Branden Ghena**, Ye-Sheng Kuo, and Prabal Dutta. Demo: Powerblade a low-profile, true-power, plug-through energy meter. In *Proceedings of the 13th ACM Conference on Embedded Networked Sensor Systems*, SenSys'15. ACM, 2015

Teaching Experience

University of Michigan, Ann Arbor, Ann Arbor, Michigan

Guest Lecturer, EECS 373: Design of Microprocessor-Based Systems (Fall 2014, Winter 2015)

Graduate Student Instructor, EECS 370: Computer Organization (Fall 2013)

Awards and Grants

TI Innovation Challenge 2015 - Best Environmental Impact, \$2,000 (2015)

National Science Foundation Graduate Research Fellowship, \$96,000 plus tuition (2014–Present)

23rd USENIX Security Symposium Travel Grant (2014)

Outstanding Graduate Student Instructor, EECS Department (Fall 2013)

Michigan Technological University, Electrical and Computer Engineering Departmental Scholar (2012)