Yu Huang

Curriculum Vitae

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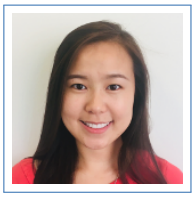

Academic Positions

Starting Jan, 2022 **Vanderbilt University**, Department of Computer Science

Assistant Professor

Education

2017 – now **University of Michigan, Ann Arbor**, Department of Electrical Engineering and Computer Science, Computer Science and Engineering Division

PhD Candidate, Advisor: *Dr. Westley Weimer*

2015 – 2017 **Univeristy of Virginia**, School of Engineering and Applied science, Computer Engineering

PhD Student, Advisor: *Dr. Laura Barnes & Dr. Westley Weimer*

2012 – 2015 **Univeristy of Virginia**, School of Engineering and Applied science, Computer Engineering

Master of Science, Advisor: *Dr. Benton H. Calhoun*

Thesis: Circuit Design for FPGAs in Sub-Threshold Ultra-Low Power Systems

2007 – 2011 **Harbin Institute of Technology**, China, School of Astronautics, Aerospace Engineering and Mechanics

Bachelor of Science

Research Interests

Software Engineering; Human Factors; Medical Imaging; Mobile Sensing; Open Source Software; Software-hardware Co-design.

Awards and Honors

2020 **EECS Rising Stars:** Selected as one of the EECS Rising Stars of 2020, hosted by University of California, Berkeley.

2020 **GitHub Octoverse Report:** The work on open source software for social good (ICSE'21) is featured in the GitHub Octoverse Report 2020.

2019 **ACM SIGSOFT Distinguished Paper Award** at the 41st ACM/IEEE International Conference on Software Engineering (ICSE), 2019.

2016 **Presidential Fellowship:** For graduate students in interdisciplinary research, sponsored by the Data Science Institute and the Office of Graduate and Postdoctoral Affairs, University of Virginia.

2011 **Univeristy Fellowship:** For undergraduate students with outstanding academic records,sponsored by Harbin Institute of Technology.

Grants

2020-2021 **Google Faculty Research Award**, Google, $80,000.

2019-2020 **fMRI Pilot Grant**, University of Michigan, $24,165.

2018-2021 **Rackham Faculty Allies and Student Ally Diversity Grant**, University of Michigan, $39,450.

2018-2019 **College of Engineering Student Organizations & Groups Grant**, University of Michigan, $1,000.

Work Experience

05/2020 – 08/2020 **Microsoft Research**, *Redmond*, WA, United States.
Research Intern, Supervisor: Dr. Denae Ford

07/2011 – 06/2012 **Chinese Academy and Sciences, National Space Center**, *Beijing*, China.
Research Assistant, Supervisor: Dr. Jinbao Liang

02/2011 – 06/2011 **Chinese Academy and Sciences, National Space Center**, *Beijing*, China.
Research Intern, Supervisor: Dr. Jinbao Liang

06/2010 – 08/2010 **Chinese Academy and Sciences, Institute of Electronics**, *Beijing*, China.
Research Intern, Supervisor: Dr. Dan Zhu

Publications

Peer-Reviewed Conference Papers

ASPLOS 2022 Hammad Ahmad, **Yu Huang**, Westley Weimer. CirFix: Automatically Repairing Defects in Hardware Design Code. ASPLOS 2022. (to appear)

ICSE 2021 **Yu Huang**, Denae Ford, Thomas Zimmermann. Leaving My Fingerprints: Motivations and Challenges of Contributing to OSS for Social Good. ICSE 2021. ***Featured in GitHub Octoverse Report 2020***

ESEM 2020 Ian Bertram, Jack Hong, **Yu Huang**, Westley Weimer, Zohreh Sharafi. Trustworthiness Perceptions in Code Review: An Eye-tracking Study. In Empirical Software Engineering and Measurement (ESEM) 2020 Emerging Results and Vision Papers.

FSE 2020 **Yu Huang**, Kevin Leach, Zohreh Sharafi, Nicholas McKay, Tyler Santander, and Westley Weimer. Biases and Differences in Code Review using Medical Imaging and Eye-Tracking: Genders, Humans, and Machines. In Foundations of Software Engineering (ESEC/FSE 2020).

ICPC 2020 Sean Stapleton, Yashmeet Gambhir, Alexander LeClair, Zachary Eberhart, Westley Weimer,Kevin Leach, and **Yu Huang**. A Human Study of Comprehension and Code Summarization. In International Conference on Program Comprehension (ICPC 2020).

ICSE 2020 Ryan Kreuger, **Yu Huang**, Xinyu Liu, Tyler Santander, Westley Weimer, and Kevin Leach. Neurological Divide: An fMRI Study of Prose and Code Writing. In International Conference on Software Engineering (ICSE 2020).

ICSE 2019 **Yu Huang**, Xinyu Liu, Ryan Kreuger, Tyler Santander, Xiaosu Hu, Kevin Leach, and Westley Weimer. Distilling Neural Representations of Data Structure Manipulation Using fMRI and fNIRS. In International Conference on Software Engineering (ICSE 2019), 396-407. ***SIGSOFT Distinguished Paper Award***

BHI 2018 Mehdi Boukhechba, Jiaqi Gong, Kamran Kowsari, Mawulolo K Ameko, Karl Fua, Philip IChow, **Yu Huang**, Bethany A Teachman, and Laura E Barnes. Physiological Changes Over the Course of Cognitive Bias Modification for Social Anxiety. In Biomedical & Health Informatics (BHI 2018), 422–425.

UbiComp 2016 **Yu Huang**, Haoyi Xiong, Kevin Leach, Yuyan Zhang, Philip Chow, Karl Fua, Bethany Teachman, and Laura Barnes. Assessing Social Anxiety Using GPS Trajectories and Point-of-Interest Data. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers (UbiComp 2016), 898–903.

UbiComp 2016 Haoyi Xiong, **Yu Huang**, Laura E Barnes, and Matthew S Gerber.. Sensus: A Cross-Platform, General-Purpose System for Mobile Crowdsensing in Human-Subject Studies. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers (UbiComp 2016), 415–426.

BigData 2015 Jinghe Zhang, Haoyi Xiong, **Yu Huang**, Hao Wu, Kevin Leach, and Laura Barnes. M-SEQ: Early Detection of Anxiety and Depression via Temporal Orders of Diagnoses in Electronic Health Data. In Proceedings of the 2015 IEEE International Conference on Big Data (BigData 2015), 2569-2577.

S3S 2015 **Yu Huang**, Aatmesh Shrivastava, and Benton Calhoun. A 145mV to 1.2 V Single Ended Level Converter Circuit for Ultra-Low Power Low Voltage ICs. In IEEE SOI-3D-Subthreshold Microelectronics Technology Unified Conference (S3S 2015), 1–3.

FPL 2015 He Qi, Oluseyi Ayorinde, **Yu Huang**, and Benton Calhoun. Optimizing Energy Efficient Low-Swing Interconnect for Sub-Threshold FPGA. In IEEE 25th International Conference on Field Programmable Logic and Applications (FPL 2015), 1–4.

FPL 2015 Oluseyi Ayorinde, He Qi, **Yu Huang**, and Benton Calhoun. Using Island-Style Bi-Directional Intra-CLB Routing in Low-Power FPGAs. In IEEE 25th International Conference on Field Programmable Logic and Applications (FPL 2015), 1–4.

Peer-Reviewed Journal Papers

TOSEM, 2020 — Zohreh Sharafi, **Yu Huang**, Kevin Leach, and Westley Weimer. Towards an Objective Measure of Developers' Cognitive Activities. In ACM Transactions on Software Engineering and Methodology. (To Appear)

J. Information Fusion, 2019 — Jiaqi Gong, **Yu Huang**, Philip I Chow, Karl Fua, Matthew Gerber, Bethany Teachman, andLaura Barnes. Understanding Behavioral Dynamics of Social Anxiety among College Students Through Smartphone Sensors. In Journal of Information Fusion 2019, 49:57-68.

J. Behavior Therapy, 2018 — Emily C Geyer, Karl C Fua, Katharine E Daniel, Philip I Chow, Wes Bonelli, **Yu Huang**, Laura E Barnes, and Bethany A Teachman. I did OK, But Did I Like It? Using Ecological Momentary Assessment to Examine Perceptions of Social Interactions Associated with Severity of Social Anxiety and Depression. In Journal of Behavior Therapy, 2018, 49(6):866–880.

JMIR 2017 — Philip Chow, Karl Fua, **Yu Huang**, Wesley Bonelli, Haoyi Xiong, Laura Barnes, and Bethany Teachman. Using Mobile Sensing to Test Clinical Models of Depression, Social Anxiety, State Affect, and Social Isolation among College Students. In Journal of Medical Internet Research (JMIR 2017), 19(3):e62

TIST 2017 — Haoyi Xiong, Jinghe Zhang, **Yu Huang**, Kevin Leach, and Laura E. Barnes. Daehr: A Discriminant Analysis Framework for Electronic Health Record Data and an Application to Early Detection of Mental Health Disorders. In ACM Transactions on Intelligent System and Technology (TIST 2017), 8(3):47:1–47:21.

JLPEA 2016 — **Yu Huang**, Aatmesh Shrivastava, Laura Barnes, and Benton Calhoun. A Design and Theoretical Analysis of a 145 mV to 1.2 V Single-Ended Level Converter Circuit for Ultra-Low Power Low Voltage ICs. In Journal of Low Power Electronics and Applications(JLPEA 2016), 16(3): 11.

Peer-Reviewed Workshop Papers

GI 2021 — **Yu Huang**, Hammad Ahmad, Stephanie Forrest, and Westley Weimer. Applying Automated Program Repair to Dataflow Programming Languages. In the workshop of Genetic Improvement (GI 2021, co-located with ICSE 2021) (To Appear).

APR 2020 — **Yu Huang**, Kevin Angstadt, Kevin Leach, and Westley Weimer. Selective Symbolic Type-Guided Checkpointing and Restoration for Autonomous Vehicle Repair. In the 1st workshop of Automated Program Repair (APR 2020, co-located with ICSE 2020), 1-8.

Digital-Biomarkers 2017 — **Yu Huang**, Jiaqi Gong, Mark Rucker, Philip Chow, Karl Fua, Matthew S. Gerber, Bethany Teachman, and Laura E. Barnes. Discovery of Behavioral Markers of Social Anxiety from Smartphone Sensor Data. Digital Biomarkers, (Digital-Biomarkers 2017), 9–14.

UbiComp 2017 Mehdi Boukhechba, **Yu Huang**, Philip Chow, Karl Fua, Bethany A. Teachman, and Laura E.Barnes. Monitoring Social Anxiety from Mobility and Communication Patterns. In Proceedingsof the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers (UbiComp 2017), 749–753

UbiComp 2016 Philip Chow, Wesley Bonelli, **Yu Huang**, Karl Fua, Bethany Teachman, and Laura Barnes. Demons: An Integrated Framework for Examining Associations Between Physiology and Self-Reported Affect Tied to Depressive Symptom. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers (UbiComp 2016), 1139–1143.

Service

2022 PC, ICSE-SEET, ICSE 2022.

2021 Reviewer, Journal of Software and Systems (JSS), 2 papers

2021 Chair, Diversity and Inclusion Panel, ICSE 2021.

2021 Reviewer, Journal of Systems and Software (JSS).

2021 PC member, SEmotion 2021, colocated with ICSE 2021.

2018-2021 Organizer, Rackham Faculty Allies and Student Ally Diversity Speaker Series, University of Michigan.

2021 Social Media Chair, the 10th international workshop on Genetic Improvement (GI) co-located at ICSE 2021.

2020 Opening Session Panelist, the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2020).

2020 Program Committee and Social Media Organizer, the 8th international workshop on Genetic Improvement (GI) co-located at ICSE 2020.

2020 Panelist and Mentor, ICSE 2020 Student Mentoring Workshop (SMeW).

2018-2020 Corporate Relations Chair, Ensemble of Computer Science and Engineering Ladies + (ECSEL+), University of Michigan.

2019-2020 Instructor, CS KickStart, CSE, University of Michigan.

2018-2019 Graduate Panelist, Douglass Houghton Scholar Program, University of Michigan.

Undergraduate Mentoring

2020-present Jack Hong, University of Michigan. Resulted in publications: *ESEM'20*.

2019-present Ian Bertram, University of Michigan. Resulted in publications: *ESEM'20*

2019-present Nicholas McKay, University of Michigan. Resulted in publications: *FSE'20*

2019-2020 Michael Flanagan, University of Michigan

2019-2020 Sean Stapleton, University of Michigan. Resulted in publications: *ICPC'20*

2019-2020 Yashmeet Gambhir, University of Michigan. Resulted in publications: *ICPC'20*

2017-2019 Ryan Kreuger, University of Michigan, now a graduate student at University of Oxford. Resulted in publications: *ICSE'19, ICSE'20*.

2017-2019 Xinyu Liu, University of Michigan, now a graduate student at Georgia Tech. Resulted in publications: *ICSE'19, ICSE'20*.

2017-2018 Sarai Alvarez, REU program, George Mason University, now a data automation engineer at Merck

2016-2017 Heather Lukas, REU program, Cornell University, now a graduate student at CalTech

2016-2017 Yuyan Zhang, University of Virginia, now a graduate student at CMU. Resulted in publications: *UbiComp'16*.

2016-2017 Wesley Bonelli, University of Virginia, now a Scientific Computing Specialist at the University of Georgia. Resulted in publications: *J.Behavior Therapy'18, JMIR'17, DigitalBiomarkers'17*.