

# DAVID GRAY WIDDER HE/HIM/HIS

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## Education

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**School of Computer Science, Carnegie Mellon University, Pittsburgh, Pennsylvania.**

PhD student advised by Laura Dabbish & James Herbsleb, 2017- Present

Masters of Science in Software Engineering, 2017-2021

**Robert D. Clark Honors College, University of Oregon, Eugene, Oregon.** 2013-2017

Bachelor of Science in Computer Science, GPA: 3.95, Major GPA: 4.15, *Magna Cum Laude*

Thesis committee: Stephen Fickas (Chair),

## Related Work Experience

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**Research Intern, Socio-Technical Systems, Intel Labs. Remote.** July 2021 – May 2022

Interviewed 27 AI engineers about their perceived ethical agency and responsibility

Led two workshops to translate findings into AI Ethics process and artifact improvements

Presented findings to 150+ practitioners in two internal invited talk series

Findings informed AI Ethics recommendations presented to C-suite decision makers

**Research Intern, Microsoft Research. Redmond, Washington.** February – May 2020

Interviewed adopters of AI Ethics guidance to find technical and organizational barriers to use

Presented findings to C-suite decision maker to inform internal Ethical AI policy roll out

**Research Intern, Jet Propulsion Laboratory, NASA. Pasadena, California.** June – August 2019

Conducted interviews, participant observation, and user studies to study software engineer's trust in an automated software engineering tool

Presented usability improvements to software team to improve software framework

## Working Papers

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**David Widder** and Dawn Nafus. "Dislocated Accountabilities in the AI Supply Chain: Modularity and Developers' Notions of Responsibility". *Under review at SAGE journal Big Data & Society*. PDF Preprint, TLDR.

Based on interviews with developers making theoretical algorithms to final end-user products, we suggest how AI Ethics research can better account for the dislocated "supply chain" nature of AI development.

**David Widder\***, Derrick Zhen\*, Laura Dabbish, James Herbsleb. "It's about power: What ethical concerns do software engineers have, and what do they (feel they can) do about them?" *Working paper*. \* denotes equal contribution. Draft PDF.

Through interviews and surveys, we show that developers' ethical concerns fall outside the scope of common AI Ethics principles, and suggest how AI Ethics research must better account for developers' (lack of) power to effect change.

## Peer-Reviewed Publications

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**David Widder**, Dawn Nafus, Laura Dabbish, James Herbsleb. “Limits and Possibilities for ‘Ethical AI’ in Open Source: A Study of Deepfakes”. To appear in: *Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, 2022. 26% acceptance rate. [PDF](#), [Video](#), [TLDR](#).

Hana Frluckaj, Laura Dabbish, **David Widder**, Sophie Huilian Qiu, James Herbsleb. “Open Source Software Participation Trajectories for Male and Female Participants” To appear in: *Proceedings of the ACM Conference on Computer-Supported Cooperative Work And Social Computing (CSCW)*, 2022. [PDF](#).

**David Widder**, Laura Dabbish, James Herbsleb, Alexandra Holloway, Scott Davidoff. “Trust in Collaborative Automation in High Stakes Software Engineering Work: A Case Study at NASA”. In: *Proceedings of the ACM Conference on Human-Computer Interaction (CHI)*, 2021. 26% acceptance rate. [PDF](#), [Video](#).

**David Widder**, Michael Hilton, Christian Kästner, and Bogdan Vasilescu. “A Conceptual Replication of Continuous Integration Pain Points in the Context of Travis CI”. In: *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (FSE)*, 2019. 24% acceptance rate. [PDF](#), [Replication Package](#).

**David Widder**, Joshua Sunshine, Stephen Fickas. “Barriers to Reproducible Scientific Programming”. In: *Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing, Short Research Papers Track (VL/HCC)*, 2019. 44% acceptance rate. [PDF](#).

Zack Coker, **David Widder**, Claire Le Goues, Christopher Bogart, and Joshua Sunshine. “A Qualitative Study on Framework Debugging”. In: *Proceedings of the IEEE Conference on Software Maintenance and Evolution (ICSME)*, 2019. 23% acceptance rate. [PDF](#).

Courtney Miller, **David Widder**, Christian Kästner, and Bogdan Vasilescu. “Why do People Give Up FLOSSing? A Study of Contributor Disengagement in Open Source”. In: *Proceedings of the Conference on Open Source Systems (OSS)*, 2019. [PDF](#).

**David Widder**, Christian Kästner, Michael Hilton, Bogdan Vasilescu. “I’m Leaving You, Travis: A Continuous Integration Breakup Story”. In: *Proceedings of the Conference on Mining Software Repositories, Short Research Papers Track (MSR)*, 2018. 27% acceptance rate. [PDF](#).

## Public Scholarship and Media

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Spoke about our research paper for a news article “Small open source projects pose significant security risks”, Stephanie Glen writing for [TechTarget](#). 28 November 2022.

Spoke about ongoing research for a news article: “Twitter Employees on Visas Can’t Just Quit”, Chloe Xiang writing in [Vice’s Motherboard](#). 18 November 2022.

Podcast Interview: “Building creative restrictions to curb AI abuse”, in conversation with Stefano Maffulli, Executive Director of the Open Source Initiative, as part of their [Deep Dive AI](#) podcast series. 6 September 2022.

Wrote article for software engineering practitioner blog: “Can you stop your open-source project from being used for evil?”, David Gray Widder writing in the [Stack Overflow blog](#), 8 Aug 2022.

Wrote article for software engineering practitioner blog: “‘Ethical AI’ isn’t just how you build it, it’s how you use it”, David Gray Widder writing in the [Stack Overflow blog](#), 30 May 2022.

Email interview, research paper quoted in practitioner blog: “The robots are coming for (the boring parts of) your job”, Eira May writing in the [Stack Overflow blog](#), 21 April 2022.

Podcast interview: “Computers Aren’t Demigods: On the existence of Bias-Free systems”, in conversation with hosts Ellie Young and Matt Lepinski on [Byte Size](#), 4 May 2021.

Co-lead letter campaign for anti-racist institutional change within CMU’s School of Computer Science, with 40 research-supported, actionable demands, accruing 605 signatories and 110+ personal testimonies. “Towards Anti-Racist Change in the School of Computer Science”, 11 September 2020. [Link to signed letter](#).

City Council testimony, newspaper interview: “Pittsburgh City Council told facial recognition bill should be stronger”, Tom Davidson reporting for [TribLive](#), 2 September 2020.

## Invited Talks

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“Among Us: A Computer Scientist’s Perspective on Doing Ethnography Among Computer Scientists”. Invited panel at the annual meeting of the [Society for Applied Anthropology](#), with discussant John W Sherry. Scheduled for 30 March 2022.

“AI Trust in a High Stakes Workplace: An Ethnography at NASA”, hosted by Senior Lecturer Rikke Jensen at the [Information Security Group](#) at Royal Holloway University of London, 1 June 2022.

“Situating ‘AI for Social Good’ and ‘AI Ethics’ at Carnegie Mellon & in our Future Careers”, for Professors Emma Strubell and Alan Black’s [Computational Ethics for NLP](#) course, Language Technologies Institute at Carnegie Mellon University, 5 April 2022.

“‘Ethical AI’ Across the AI Supply Chain: The Developer’s Perspective”, with Dawn Nafus at the *Intel Insights Discussion Forum* invited talk series, hosted by Michael Jacobson at Intel Corporation, 16 December 2021.

“‘Ethical AI’? Complicating and Situating Accountability, Transparency, and Trust”, at the *Data Science Center of Excellence* invited talk series, hosted by Joyce Weiner at Intel Corporation, 9 September 2021.

“‘Responsible AI’? Complicating and Situating Accountability, Transparency, and Trust”, invited by John W. Sherry to present to the User Experience Innovation Lab, Intel Labs, 20 May 2021.

## Non-Refereed Publications

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**David Widder.** “Gender and Robots: A Literature Review”. *Technical Report*, 2019. [Link](#).

**David Widder.** “Gender in Open Source Communities: Different Migration Patterns and Forms of Work”. *VL/HCC Graduate Consortium*, 2019. [Link](#).

**David Widder.** “Tensions Between Scientific Programming and the Scientific Method”. *Undergraduate Honors Thesis*. Pass with Honors, 2017. [Link](#).

**David Widder.** “What Are Barriers to Efficient ROS Debugging?” *REUSE Poster Session*. 2016.

## Teaching Activities

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Advocated for introducing ethics content into core Software Engineering PhD curriculum. Developed and delivered this content, including: curating assigned readings, delivering two lectures and facilitating accompanying discussions, and grading reading responses. *Intro Course for Software Engineering PhD Students*, Spring 2022, 2023 with Professors Jonathan Aldrich and Christian Kästner.

Teaching Assistant for Ethics and Policy Issues in Computing, Spring 2021. Course Instructors: Laura Dabbish and James Herbsleb, Carnegie Mellon University. Held office hours, lead breakout discussions, graded and gave feedback on exams and assignments.

Teaching Assistant for Human Factors in Human-Computer Interaction, Fall 2019. Course Instructor: Laura Dabbish, Carnegie Mellon University. Guest lectured, held office hours, graded and gave feedback on exams and assignments.

## **Student Mentorship**

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Interview and profile of undergraduate mentorship: “REUSE Mentors Students to Success”, Cristina Rouvalis writing in [The Link](#), Magazine of CMU’s School of Computer Science, Summer 2019. [Related video](#).

Lyric Sampson, 2022 – Present, Alabama Agricultural and Mechanical University

Derrick Zhen, 2022 – Present, Swarthmore College

Hana Fruckaj, 2019 – 2020, now a PhD Student at University of Texas at Austin

Courtney Miller, 2018 – 2019, now a PhD Student at Carnegie Mellon University

Jamie Rosas-Smith, 2018, now a Software Engineer at JP Morgan Chase

## **Institutional Service**

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### **Application Reviewer, Research Experience for Undergraduates, 2018-Present**

Reviewed 25-35 applications for the REUSE program yearly.

### **Dean’s PhD Advisory Committee, Co-Director, 2017 - 2020, Member, 2020 - 2021**

Advocating for SCS PhD student interests to Dean: i.e. healthcare, anti-racism, abusive faculty.

### **Departmental Climate Task Force, Student Co-Chair, 2018 - 2019**

Committee tasked with improving departmental climate, inclusiveness, and diversity.

### **Research Experience for Undergraduates in Software Engineering Mentor, 2018, 2020**

Mentored summer undergraduate research interns as part of the REUSE summer program

## **Professional Service**

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Conference on Human-Computer Interaction (CHI), 2021, 2023 Reviewer

International Conference on Automated Software Engineering (ASE), 2018 Sub-reviewer

Transactions on Software Engineering (TSE), 2018 Sub-reviewer

Conference on Computer Human Interaction (CHI), 2020 Reviewer

## **Memberships and Affiliations**

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Against Carceral Tech Pittsburgh

Coveillance Collective

Association for Computing Machinery, & Special Interest Group on Software Engineering

Upsilon Pi Epsilon, Honor Society for Computing and Information Disciplines

Phi Beta Kappa, Liberal Arts Honors Society