

# DAVID GRAY WIDDER<sup>HE/HIM/HIS</sup>

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## Education

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**School of Computer Science, Carnegie Mellon University, Pittsburgh, Pennsylvania.** 2017- Present  
PhD Candidate. Committee: Laura Dabbish & James Herbsleb (chairs), Dawn Nafus, Jay Aronson  
Expected graduation: June 2022

Masters of Science in Software Engineering, earned 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), Helen Southworth, Boyana Norris.

## Related Work Experience

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**Responsible AI Research Intern, Intel Labs. Remote.** July 2021 – May 2022

Designed and led research to improve company Responsible AI policy

Findings were presented to C-suite decision makers as AI policy recommendations

Led two workshops to translate findings into AI Ethics policy improvements

Presented findings to 150+ employees of varying backgrounds in two internal invited talk series

**Responsible AI Research Intern, Microsoft Research. Washington.** February – May 2020

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

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

**Trustworthy AI Research Intern, Jet Propulsion Laboratory, NASA. 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](#).

Through interviews with 27 software engineers, we show that fractured inter-firm economies of AI production – enabled by the engineering mythos of modularity – leave engineers without agency or responsibility to prevent downstream harm.

**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](#). *Under review at the ACM Conference on Fairness, Accountability, and Transparency (FACCT)*, 2023.

Through interviews and surveys, we show that software engineers lack power to raise their ethical concerns, which often fall outside the narrow scope of common AI Ethics principles.

## 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](#), [TLDR](#).

**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

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Research paper featured in French tech news site: “Comment se construit la confiance dans un logiciel de génération automatique de code?”, Martin Clavey writing for [NextInpact](#). 9 February 2023.

Spoke about our research on open source contributor disengagement: “Small open source projects pose significant security risks”, Stephanie Glen writing for [TechTarget](#). 28 November 2022.

Spoke about research on software engineers’ ethical concerns: “Twitter Employees on Visas Can’t Just Quit”, Chloe Xiang writing for [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 discussion at the annual meeting of the [Society for Applied Anthropology](#), with discussant John W. Sherry, scheduled for 30 March 2023. Winner of the *Beatrice Medicine Travel Award*.

“Contesting the Ethical Value of ‘Open Source’ AI: A Case Study of Deepfakes”. At the Allen Institute for AI, scheduled for 6 March 2023.

“Ethical AI in Open Source”. Invited Lecture, hosted by Senior Research Associate Dr. Ola Michalec for the [Data Ethics Club](#) at the University of Bristol, scheduled for 8 March 2023.

“So you have an Ethical Concern: What Next?”, for Professors Emma Strubell and Maarten Sap’s Computational Ethics for NLP course, Language Technologies Institute at Carnegie Mellon University, February 16th.

“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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Successfully advocated for, developed, and delivered the first ethics content in Carnegie Mellon's Software Engineering PhD curriculum. Curated reading assignments, delivered two lectures, facilitated accompanying discussions, and graded reading responses. *Introduction Course for Software Engineering PhD Students*, with Professors Jonathan Aldrich and Christian Kästner. Fall 2022, 2023.

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.

Derrik Zhen, 2022 – Present, Swarthmore College

Lyric Sampson, 2022, Alabama Agricultural and Mechanical University

Hana Frluckaj, 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.

### **Nominee for Carnegie Mellon University Graduate Student Service Award, 2019**

Nominated for school wide award recognizing my advocacy for graduate student causes

### **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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ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT), 2023 Reviewer

ACM Conference on Human-Computer Interaction (CHI), 2020, 2021, 2023 Reviewer

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

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