

DAVID GRAY WIDDER^{HE/HIM/HIS}

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Education

School of Computer Science, Carnegie Mellon University, Pittsburgh, Pennsylvania. 2017–Present
PhD Candidate. Expected graduation: Summer 2022

Committee: Laura Dabbish & James Herbsleb (co-chairs), Dawn Nafus, Jay Aronson

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

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 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

David Gray Widder and Dawn Nafus. "Dislocated Accountabilities in the AI Supply Chain: Modularity and Developers' Notions of Responsibility". Accepted with minor revisions, to appear in: *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 Gray 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](#). Working paper.

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

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

Hana Frluckaj, Laura Dabbish, **David Gray Widder**, Sophie Huilian Qiu, James Herbsleb. “Open Source Software Participation Trajectories for Male and Female Participants” In: *Proceedings of the ACM Conference on Computer-Supported Cooperative Work And Social Computing (CSCW)*, 2022. 25% acceptance rate. [PDF](#), [Video](#).

David Gray 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 Gray 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 Gray 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 Gray 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 Gray 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 Gray 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](#).

Other Publications

David Gray Widder, Richmond Wong. “Thinking Upstream: Ethics and Policy Opportunities in AI Supply Chains”. In: *Designing Technology and Policy Simultaneously: Towards A Research Agenda and New Practice*, 2023. A workshop colocated with CHI’23. [Link](#).

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

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

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

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

Invited Talks

“Examining the Ethical Value of ‘Open’AI: Upsides, Downsides, and Middle Ground Approaches”. Invited lecture, hosted by Professor Maarten Sap, at the Allen Institute for AI, scheduled for 6 April 2023.

"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 panel chair Professor Hsain Ilahiane, scheduled for 30 March 2023. Winner of the [2023 Beatrice Medicine Award](#).

"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, 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, 16 February 2023.

"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 Dr. John W. Sherry to present to the User Experience Innovation Lab, Intel Labs, 20 May 2021.

Public Scholarship and Media

I started and facilitate a weekly [Critical AI Studies Reading Group](#), convening international and interdisciplinary academics, software practitioners, and participants from civil society. Currently meeting on Thursdays at 6pm ET. July 2022 – Present. Open to all!

Quoted in white paper on Open Source AI, released by the Open Source Initiative governing body: "[Deep Dive: AI - Final Report](#)". Stefano Maffulli, Executive Director, Open Source Initiative. 28 February 2023.

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 with Victoria Dean 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.

Teaching and Pedagogical Activities

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

Feature about my undergraduate mentoring work: “REUSE Mentors Students to Success”, Cristina Rouvalis writing in The Link, Magazine of CMU’s School of Computer Science, Summer 2019. Related video.

Derrick 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

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, advising issues.

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

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

Against Carceral Tech Pittsburgh

Coveillance Collective

Association for Computing Machinery (ACM); Special Interest Groups on: Software Engineering (SIGSOFT), Computer-Human Interaction (SIGCHI)

Upsilon Pi Epsilon, Honor Society for Computing and Information Disciplines

Phi Beta Kappa, Liberal Arts Honors Society