Zixuan (Steve) Feng

Computer Science, Ph.D. Candidate, Minor: Statistics

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Research Profile

I am a fifth-year Ph.D. candidate in Software Engineering at the School of Electrical Engineering and Computer Science at Oregon State University, expected to graduate in June 2026. My research focuses on understanding and improving the socio-technical dynamics of software development. I collect data from open-source software and analyze it using mixed research methods, including statistical analysis, grounded theory, and large language models, to develop or validate theories about software engineering processes and outcomes. My goal is to answer questions such as: How can we empower distributed teams to develop software effectively and productively? How can technology help software teams do more with less?

I have published in leading venues such as ICSE, FSE, TOSEM, ESEM, IST, and CHASE. Beyond academic contributions, I have translated my research findings into practical guidance for industry, sharing actionable insights through industry talks such as OSSNA, FOSSY, and the Linux Plumbers Conference.

Education

Oregon State University (Oregon, United States)

2021 Fall – 2026 June	Ph.D. Candidate - Computer Science/Statistics	GPA:3.81
2018 Fall - 2021 Winter	Master - Computer Science/Statistics	GPA:3.81
2013 Fall - 2018 Summer	Bachelor of Science Computer Science	Major GPA:3.52

Publication [Total: 20 — 9 conference papers; 6 journal papers; 3 workshop papers; 2 preprints] Google Scholar

Conference Publications [9 total: 6 acceptance and 3 under submission]

[C9] When Domains Collide: An Activity Theory Exploration of Cross-Disciplinary Collaboration
Zixuan Feng, Thomas Zimmermann, Lorenzo Pisani, Christopher Gooley, Jeremiah Wander, Anita Sarma
*ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (**ESEM 2025**)*
Acceptance Rate: 18% [PDF]

[C8] The Multifaceted Nature of Mentoring in OSS: Strategies, Qualities, and Ideal Outcomes
Zixuan Feng, Igor Steinmacher, Marco Gerosa, Tyler Menezes, Alexander Serebrenik, Reed Milewicz, Anita Sarma
*IEEE/ACM The 18th International Conference on Cooperative and Human Aspects of Software Engineering (**CHASE 2025**)*
Acceptance Rate: 24% [PDF]

[C7] Investigating the Impact of Interpersonal Challenges on Feeling Welcome in OSS
Bianca Trinkenreich**, Zixuan Feng**, Rudrajit Choudhuri, Marco Gerosa, Anita Sarma, Igor Steinmacher
*IEEE/ACM 46th International Conference on Software Engineering (**ICSE 2024**)*
Acceptance Rate: 25% [PDF]

[C6] How to Support ML End-User Programmers through a Conversational Agent
Emily Arteaga Garcia, Joao Felipe Pimentel, **Zixuan Feng**, Marco Gerosa, Igor Steinmacher, Anita Sarma
*IEEE/ACM 45th International Conference on Software Engineering (**ICSE 2023**)*
First-round Acceptance Rate: 5% [PDF]

[C5] The State of Diversity and Inclusion in Apache: A Pulse Check
Zixuan Feng, Mariam Guizani, Marco Gerosa, Anita Sarma
*IEEE/ACM The 16th International Conference on Cooperative and Human Aspects of Software Engineering (**CHASE 2023**)*
Acceptance Rate: 22.3% [PDF]

[C4] A Case Study of Implicit Mentoring, its Prevalence, and Impact in Apache
Zixuan Feng, Amreeta Chatterjee, Anita Sarma, Iftekhar Ahmed
*The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE 2022**)*
Acceptance Rate: 21% [PDF]

[C3 – Under Submission] Measuring the Productivity Impact of AI Adoption in Software Development
Sadia Afroz, **Zixuan Feng (co-first author)**, Anita Sarma,
*IEEE/ACM 48th International Conference on Software Engineering Software Engineering in Society (**CAHSE 2026**)*

[C2 – Under Submission] Burnout in the Age of AI: Understanding the Impact of AI Adoption on Software Developers
Zixuan Feng, Sadia Afroz, Anita Sarma,
*IEEE/ACM 48th International Conference on Software Engineering Software Engineering in Society (**ICSE-SEIS 2026**)*

[C1 – Under Submission] Impact of Governance Structure on Inclusiveness In OSS
Mutsaers, Milou, **Zixuan Feng**, Anita Sarma, Alexander Serebrenik
*IEEE/ACM 48th International Conference on Software Engineering Software Engineering in Society (**ICSE-SEIS 2026**)*

Journal [6 total: 3 acceptance, 2 under review/revision, and 1 under submission]

[J6 – Under Review] Charting Uncertain Waters: A Socio-Technical Framework for Navigating GenAI's Impact on Open Source Communities
Zixuan Feng, Reed Milewicz, Emerson Murphy-Hill, Igor Steinmacher, Alexander Serebrenik, Tyler Menezes, Anita Sarma
*ACM Transactions on Software Engineering and Methodology (**TOSEM**), 2025,*
Impact Factor: 6.6 [PDF]

[J5 – Under Review] The Nuts and Bolts of Open Source: A Taxonomy of Glue Work in OSS Projects
Zixuan Feng, Shaokun Fan, Katie Kimura, Julia Furst Morgado, Lorenzo Pisani, Sophia Vargas, Anita Sarma
*European Journal of Information Systems (**EJIS**), 2025,*
Impact Factor: 7.0 [PDF]

[J4 – Under Submission] Automated Task Tree Generation for Open Source Project Onboarding Documentation
Prashant Tandan, **Zixuan Feng**, Igor Steinmacher, Anita Sarma
*Information and Software Technology (**IST**), 2025,*
Impact Factor: 4.3

[J3] Addressing OSS Community Managers' Challenges in Contributor Retention
Zixuan Feng, Katie Kimura, Bianca Trinkenreich, Igor Steinmacher, Marco Gerosa, Anita Sarma
*ACM Transactions on Software Engineering and Methodology (**TOSEM**), 2025,*
Impact Factor: 6.6 [PDF]

[J2] Community Tapestry: An Actionable Tool to Track Turnover and Diversity in OSS
Mariam Guizani; **Zixuan Feng (co-first author, corresponding author)**; Emily Arteaga; Katie Kimura; Diane Mueller; Luis Cañas Díaz; Alexander Serebrenik; Anita Sarma
*Information and Software Technology (**IST**), 2025,*
Impact Factor: 4.3 [PDF]

[J1] Guiding the way: A systematic literature review on mentoring practices in open source software projects
Zixuan Feng, Katie Kimura, Bianca Trinkenreich, Anita Sarma, Igor Steinmacher

*Information and Software Technology (**IST**), 2024,*
Impact Factor: 4.3 [PDF]

Other Refereed Publications (3 total; e.g., Workshop, Tech Report, Abstracts;)

[O3] Promoting and Studying Diversity, Equity, and Inclusion in the ASF Community [PDF]
Zixuan Feng, Anita Sarma, Luis Canas-Diaz, Katia Rojas
Apache Software Foundation Reports and Statements

[O2] The State of Survival in OSS: The Impact of Diversity [PDF]
Zixuan Feng
The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023 – Student Research Competition)

[O1] OSS Unsung Heroes: Crafting Productive Communities Invisibly [PDF]
Zixuan Feng
IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2023 Graduate Consortium)

Preprints [2 total; *Co-First Author]

[P2] Make It Make Sense! Understanding and Facilitating Sensemaking in Computational Notebooks [PDF]
Souti Chattopadhyay, ***Zixuan Feng (co-first author)**, Audrey Au, Emily Arteaga, Gonzalo Ramos, Anita Sarma, Titus Barik

[P1] Implicit Mentoring: The Unacknowledged Developer Efforts in Open Source [PDF]
Zixuan Feng, Amreeta Chatterjee, Anita Sarma, Iftekhar Ahmed

Industry Talk

Glue Work Makes the Community Work: Sustaining OSS Through Invisible Labor ***FOSSY 2025***	July 2025
Navigating the Growing Diversity Challenges in OSS [Video] *The Linux Foundation Open Source Summit North America 2024 (**OSSNA 2024**)*	April 2025
Beyond Code: Recognizing the Crucial Role of Glue Work in Open Source [Video] *The Linux Foundation Open Source Summit North America 2024 (**OSSNA 2024**)*	April 2025
OSS Empowering Engagement: Introducing a Dynamic Dashboard for Proactive Retention Strategies ***Linux Plumber Conference 2023***	November 2023
From Conversations to Action: Creating a healthy, diverse, open source community ***FOSSY 2023***	July 2023

Research/Work Experience

Oregon State University, School of Electrical Engineering and Computer Science *Graduate Research Assistant,* advised by Anita Sarma	2021 - Present
Microsoft Research *Research Intern,* Advised by Thomas Zimmermann, Lorenzo Pisani	Summer 2024
Apache Software Foundation	2023 - 2024

Research Consultant, in parallel with my research, I am working as a student researcher to design interventions that improve contributors' experiences at the Apache Software Foundation.

Google Open Source Programs Office   2024 - 2025
Student Research Lead, directed research on *glue work* in open source communities, aiming to enhance the sustainability of software development.

Oregon State University, School of Electrical Engineering and Computer Science.   2018 - 2019
Graduate Research Assistant sponsored by the Oregon Department of Transportation, advised by Yue Zhang, developed optimal rumble strips for Oregon Department of Transportation to enhance traffic safety while minimizing environmental impact, utilizing finite element modeling, statistical analysis, and machine learning.

Awards, Grants, and Honors

OPEN AI, Researcher Access Program   January 2024
Principal Investigator / Sole applicant, Amount: **$2,500**

Google Research Reward   December 2023
Shadow Applicant / Co-Investigator, Amount: **$100,000**

NAMSOR   December 2022
Principal Investigator / Sole applicant, Amount: **$3,000** [[PRESS](#)]

Cloudbank Amazon AWS
Applicant, Amount: **$15,000**   April 2023

Oregon State University ScholarDollar   October 2022
Amount: **$1,000**

Oregon State University Undergraduate Honor Roll Student

Service

Computer Science Conference Organizer

- Web Chair, *IEEE/ACM CHASE*, 2026
- Proceedings Chair, *IEEE VL/HCC,* 2024

Paper Reviewer/PC members (20+ paper reviews since 2023)

- PC member: *IEEE/ACM CHASE*, 2026
- *Information and Software Technology*, 2025
- *IEEE software*, 2025
- *IEEE Transactions on Reliability*, 2025
- *CHI*, 2024
- *CSCW*, 2024
- *CHI,* 2023
- *TOSEM*, 2024 (Co-reviewer)
- *ESEM*, 2024 (Co-reviewer)
- ICSE, 2024 (Co-Reviewer)
- *ESEC/*FSE, 2023 (Co-Reviewer)

Conference Student Volunteer
- *ESEC/*FSE, 2023

Teaching

Instructor, CS 162: Introduction to Computer Science II   Fall 2025
Oregon State University, School of Electrical Engineering and Computer Science
Number of Students (70+)

Guest Lecture, CS 352 Introduction to Usability Engineering   2022-2024
Oregon State University, School of Electrical Engineering and Computer Science

Graduate Teaching Assistant, ST 201 Principles of Statistics   2020-2021
Oregon State University, School of Electrical Engineering and Computer Science

Graduate Teaching Assistant, CS 458 Information Visualization,   Spring 2020
Oregon State University, School of Electrical Engineering and Computer Science

Graduate Teaching Assistant, CS 453/553 Scientific Visualization,   Fall 2019
Oregon State University, School of Electrical Engineering and Computer Science

Graduate Teaching Assistant, CS 444/544 Operating System II,   Spring 2019
Oregon State University, School of Electrical Engineering and Computer Science

Mentoring

Afroz, Sadia (Ph.D Student)   2025 to present
Oregon State University, School of Electrical Engineering and Computer Science

Milou Mutsaers (Master Student)   2024 to present
Eindhoven University of Technology, Software Engineering and Technology cluster

Edward Gilmour (High School Internship)   Summer 2025
Oregon State University, School of Electrical Engineering and Computer Science

Soumiki Chattopadhyay (Master Student)   2023 - 2025
Oregon State University, School of Electrical Engineering and Computer Science

Katie Kimura (Undergraduate Research Assistant)   2023 - 2025
Oregon State University, School of Electrical Engineering and Computer Science

Prashant Tandan (Master Student)   2023 - 2025
Oregon State University, School of Electrical Engineering and Computer Science

Dylan Liu (Undergraduate Research Assistant)   2023 - 2024
Oregon State University, School of Electrical Engineering and Computer Science

Emily Arteaga (Master Student)   2022 - 2024
Oregon State University, School of Electrical Engineering and Computer Science

Emma Di (High School Internship --- Saturdays Academy)   Summer 2021
Oregon State University, School of Electrical Engineering and Computer Science

Highlight Skills

Artificial Intelligence & Machine Learning
- Machine Learning: Proficient in applying supervised and unsupervised learning for data-driven insights and decision support.
- Large Language Models (LLMs): Proficient in fine-tuning, prompt engineering, and evaluation.
- Retrieval-Augmented Generation (RAG): Proficient in designing and implementing retrieval-enhanced pipelines for knowledge management and information access.
- Multi-Agent Systems: Proficient in developing agent-based solutions for coordination, automation, and complex problem-solving.
- Natural Language Processing (NLP): Proficient in applying NLP to text, documentation, and communication data.
- Data Analytics with ML: Proficient in mining and analyzing large-scale datasets using machine learning to uncover patterns and trends.

Data Analysis, Mining & Statistical Methods
- Data Analysis & Management: Proficient in cleaning, transforming, and analyzing large-scale datasets.
- Data Mining: Proficient in large-scale data mining, including software repositories, developer platforms, and community datasets.
- Statistical Testing: Proficient in parametric and non-parametric hypothesis testing.
- Proficient in linear, logistic, hierarchical/nested, and nonlinear models, including exploratory and confirmatory factor analysis (EFA analysis).
- Advanced Methods: Proficient in survival analysis, Structural Equation Modeling (SEM), Partial Least Squares (PLS-SEM), moderation/mediation analysis, and multivariate regression.
- Survey & Experimental Analysis: Proficient in survey design, validation, and analysis; skilled in experimental and quasi-experimental methodologies.

Empirical & Human-Centered Research Methods

- Field & User Studies: Proficient in designing and conducting in-situ studies of practices and organizational contexts.
- Case Study Design: Proficient in structuring and executing multi-site and longitudinal case studies to capture complex socio-technical phenomena.
- Qualitative Methods: Proficient in semi-structured interviews, qualitative coding, thematic analysis, and grounded theory.
- Quantitative Methods: Proficient in survey design, validation, and analysis, as well as experimental and quasi-experimental methodologies.
- Human-Centered Design & Evaluation: Proficient in inclusive design, heuristic evaluation, cognitive walkthroughs, and usability testing.
- Theoretical Grounding: Proficient in a wide range of social and organizational theories (e.g., socio-technical systems, activity theory, distributed cognition, invisible labor) to guide analysis and interpretation.

Programming languages
- Python, R, C, C++, ABAQUS, BASH, MySQL, JAVASCRIPT, PHP, HTML/CSS

Relevant Coursework

Computer Science:

CS 560 Data-Driven Software Engr, Oregon State University, EECS
CS 565 Human-Computer Interaction, Oregon State University, EECS
CS 570 High Performance Architecture, Oregon State University, EECS
CS 559 Numerical Modelling, Oregon State University, EECS

CS 561 Software Engineering Methods, Oregon State University, EECS
CS 575 Intro to Parallel Programming, Oregon State University, EECS
CS 557 Computer Graphics Shaders, Oregon State University, EECS

Statistics:

ST 561 & 562 & 563 Theory of Statistics, Oregon State University, Statistics
ST 551 & 552 & 553 Statistical Methods, Oregon State University, Statistics
ST 537 Data Visualization, Oregon State University, Statistics
ST 592 Statistical Genomics, Oregon State University, Statistics
ST 521 & 522 Intro to Mathematical Stats, Oregon State University, Statistics
ST 511 & 512& 513 Methods of Data Analysis, Oregon State University, Statistics