Preetha Chatterjee

ASSISTANT PROFESSOR · DREXEL UNIVERSITY

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Research Interests

Software engineering, machine learning and natural language processing applications to software engineering, software data analytics, mining software repositories, empirical software engineering, human and social aspects of software engineering

Professional Experience

2021-Present	**Assistant Professor**, *Department of Computer Science*, Drexel University, USA
2016-2021	**Research Assistant**, *Department of Computer and Information Sciences*, University of Delaware, USA
2014-2016	**Teaching Assistant**, *Department of Computer and Information Sciences*, University of Delaware, USA
2013-2014	**QA Engineer**, Integral Development Corporation, India
2012-2013	**Software Engineer**, Theorem Private Limited, India
2009-2012	**Project Engineer**, Wipro Technologies, India

Education

University of Delaware   *United States of America*
PH.D. IN COMPUTER SCIENCE   *2014 - 2021*
Department of Computer & Information Sciences
Dissertation Title: *Mining Information from Developer Chats Towards Building Software Maintenance Tools*
Advisor: Dr. Lori Pollock

University of Delaware   *United States of America*
M.S. IN COMPUTER SCIENCE   *2014 - 2016*
Department of Computer & Information Sciences
Advisor: Dr. Lori Pollock

West Bengal University of Technology   *India*
B.TECH. IN INFORMATION TECHNOLOGY   *2004 - 2008*
Department of Information Technology

Honors and Awards

2022. **Summer Research Award for Tenure/Tenure track Faculty**
Drexel University, provided to the most meritorious research activity proposals to pursue research activities that will enhance recipient careers as well as increase their contributions to Drexel.

2021. **Frank A. Pehrson Graduate Student Award for Outstanding Computer Science Research**
University of Delaware, in recognition of outstanding performance and future potential in the field.

2020. **GHC Sponsorship**
University of Delaware, to attend virtual Grace Hopper Celebration of Women in Computing.

2019. **NSF Student Travel Support**
U.S. National Science Foundation, to financially support selected researchers in attending the 41st International Conference on Software Engineering (ICSE).

2017. **ACM-SIGSOFT CAPS Travel Award**
ACM Special Interest Group on Software Engineering, to financially support selected researchers in attending the 14th International Conference on Mining Software Repositories (MSR).

2017. **Professional Development Award**
University of Delaware, to help selected graduate students participate in significant professional conferences pertaining to their field of study.

2017. **WIE Conference Travel Scholarship**
Women in Engineering Association at University of Delaware, to help selected graduate students participate in significant professional conferences.

2017. **CRA-W Travel Scholarship**
Computing Research Association, to attend Grad Cohort Workshop.

2016. **Lauri Pfeffer Shinn Memorial Award**
University of Delaware, in recognition of academic success and contribution to the Department of Computer and Information Sciences.

2015. **GHC Travel Scholarship**
University of Delaware, to attend Grace Hopper Celebration of Women in Computing as a mentor to the undergraduate students.

2015. **CRA-W Travel Scholarship**
Computing Research Association, to attend Grad Cohort Workshop.

Research Funding

Awarded Proposals

2022. **Faculty Summer Research Awards for Tenure/Tenure-Track Faculty, Drexel University**
Title: "Towards Enabling Affective Awareness in Free Open Source Software (FOSS)"
PI: **Preetha Chatterjee**
Total Award Amount: $7,000

Publications

Refereed Journal Publications

2023. Rezvaneh (Shadi) Rezapour and **Preetha Chatterjee**, "Analyzing Toxicity in Open Source Software Communications Using Psycholinguistics and Moral Foundations Theory", Journal of Systems and Software (JSS), Research Paper, 2023 (Under review).

2021. **Preetha Chatterjee**, Kostadin Damevski, Nicholas A. Kraft, and Lori Pollock, "Automatically Identifying the Quality of Developer Chats for Post Hoc Use", Transactions on Software Engineering and Methodology (TOSEM), Volume 30, Issue 4, October 2021 (Impact factor: 2.674).

2020. **Preetha Chatterjee**, Minji Kong, and Lori Pollock, "Finding Help with Programming Errors: An Exploratory Study of Novice Software Engineers' Focus in Stack Overflow Posts", Journal of Systems and Software (JSS), Research Paper, Volume 159, Jan 2020 (Impact factor: 2.829).

Refereed Conference Publications [Underlined Students are advised by me at Drexel University]

2023. Amirali Sajadi, Kostadin Damevski, and **Preetha Chatterjee**, "Interpersonal Trust in OSS: Exploring Dimensions of Trust in GitHub Pull Requests", in Proceedings of the 45th International Conference on Software Engineering (ICSE), New Ideas and Emerging Results Track, May 2023 (Acceptance rate: 22%).

2022. Mia Mohammad Imran, Yashasvi Jain, **Preetha Chatterjee**, and Kostadin Damevski, "Data Augmentation for Improving Emotion Recognition in Software Engineering Communication", in Proceedings of the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE), Research Track, Oct 2022 (Acceptance rate: 18%).

2022. Keerthana Muthu Subash, Lakshmi Prasanna Kumar, Sri Lakshmi Vadlamani, **Preetha Chatterjee**, and Olga Baysal, "DISCO: A Dataset of Discord Chat Conversations for Software Engineering Research", in Proceedings of the 19th International Conference on Mining Software Repositories (MSR), Data Showcase Track, May 2022.

2022. **Preetha Chatterjee**, Tushar Sharma, Paul Ralph, "Empirical Standards for Repository Mining", in Proceedings of the 19th International Conference on Mining Software Repositories (MSR), Tutorial, May 2022

2021. **Preetha Chatterjee**, Kostadin Damevski, and Lori Pollock, "Automatic Extraction of Opinion-based Q&A from Online Developer Chats", in Proceedings of the 43rd International Conference on Software Engineering (ICSE), Technical Track, May 2021 (Acceptance Rate: 22.4%).

2020. **Preetha Chatterjee**, Kostadin Damevski, Nicholas A. Kraft, and Lori Pollock, "Software-related Slack Chats with Disentangled Conversations", in Proceedings of the 17th International Conference on Mining Software Repositories (MSR), Data Showcase Track, May 2020 (Acceptance Rate: 38.8%).

2020. **Preetha Chatterjee**, "Extracting Archival-Quality Information from Software-Related Chats", in Proceedings of the 42nd International Conference on Software Engineering (ICSE), Doctoral Symposium Track, May 2020 (Invited Talk Acceptance rate: 34.6%).

2019. **Preetha Chatterjee**, Kostadin Damevski, Lori Pollock, Vinay Augustine, and Nicholas A. Kraft, "Exploratory Study of Slack Q&A Chats as a Mining Source for Software Engineering Tools", in Proceedings of the 16th International Conference on Mining Software Repositories (MSR), Research Track, May 2019 (Acceptance rate: 25.4%).

2017. **Preetha Chatterjee**, Benjamin Gause, Hunter Hedinger, and Lori Pollock, "Extracting Code Segments and Their Descriptions from Research Articles," in Proceedings of the 14th International Conference on Mining Software Repositories (MSR), Research Track, May 2017 (Acceptance rate: 30.6%).

2017. **Preetha Chatterjee**, Manziba Akanda Nishi, Kostadin Damevski, Vinay Augustine, Lori Pollock, and Nicholas A. Kraft, "What Information about Code Snippets Is Available in Different Software-Related Documents? An Exploratory Study", in Proceedings of the 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER), Early Research Achievements Track, Feb 2017 (Acceptance rate: 32.5%).

Refereed Workshop Publications

2022. **Preetha Chatterjee**, "Automatic Identification of Informative Code in Stack Overflow Posts", in Proceedings of the 1st International Workshop on Natural Language-based Software Engineering (NLBSE), co-located with ICSE, May 2022.

Other Publications

2021. **Preetha, Chatterjee**, "Mining Information from Developer Chats Towards Building Software Maintenance Tools", University of Delaware, Ph.D. Thesis, 2021.

2015. **Preetha, Chatterjee**, "Exploring the Generality of a Java-based Loop Action Model for the Quorum Programming Language", University of Delaware, Ph.D. Prelims, 2015.

Talks and Presentations

INVITED TALKS

2022. *Mining Software Repositories*,
Comcast Software Engineering Research Presentation, Drexel University, USA.

2022. *ACM SIGSOFT Empirical Standards of Mining Software Repositories*,
Tutorial at the 19th International Conference on Mining Software Repositories (MSR).

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Keynote Talk at Drexel Society of Artificial Intelligence, Drexel University, USA.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at University of Maryland Baltimore County, USA.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Carleton University, Canada.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Auburn University, USA.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Drexel University, USA.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Oakland University, USA.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Boise State University, USA.

2021. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at George Mason University, USA.

2020. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Inria, France.

2020. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at University of Zurich, Switzerland.

2020. *Mining Software Developer Chats Towards Improving Software Maintenance Tools*,
Seminar at Delft University of Technology (TU Delft), Netherlands.

2017. *Mining Code Examples with Descriptive Text from Software Artifacts*,
Seminar at the Special Interest Group in Software Systems at University of Delaware, USA.

RESEARCH PRESENTATIONS

2022. *Automatically Identifying the Quality of Developer Chats for Post Hoc Use*, 37th IEEE/ACM International Conference on Automated Software Engineering (ASE), Journal-first Paper Presentation.

2022. *Automatic Identification of Informative Code in Stack Overflow Posts*, International Workshop on Natural Language-based Software Engineering (NLBSE), Paper Presentation (co-located ICSE events).

2021. *Automatic Extraction of Opinion-based Q&A from Online Developer Chats*, Journal of Systems and Software (JSS), Invited Paper Video, prerecorded.

2021. *Mining Information from Developer Chats Towards Building Software Maintenance Tools*, University of Delaware, PhD Thesis Dissertation, Newark, USA.

2021. *Automatic Extraction of Opinion-based Q&A from Online Developer Chats*, 43rd International Conference on Software Engineering (ICSE), Paper Presentation Talk.

2021. *Finding Help with Programming Errors: An Exploratory Study of Novice Software Engineers' Focus in Stack Overflow Posts*, Journal of Systems and Software (JSS), Featured Paper Video, prerecorded.

2020. *Extracting Archival-Quality Information from Software-Related Chats*, 42nd International Conference on Software Engineering (ICSE), Paper Presentation Talk.

2020. *Software-related Slack Chats with Disentangled Conversations*, 17th International Conference on Mining Software Repositories (MSR), Paper Presentation.

2019. *Exploratory Study of Slack Q&A Chats as a Mining Source for Software Engineering Tools*, 16th International Conference on Mining Software Repositories (MSR), Paper Presentation Talk, Montreal, Canada.

2019. *Extracting Archival-Quality Information from Software-Related Chats*, University of Delaware, PhD Proposal Presentation Talk, Newark, USA.

2018. *Finding My Solution in the Haystack of a Post: An Exploratory Study of Stack Overflow*, CIS Department 55 Years Anniversary Showcase at University of Delaware, Poster Presentation, Newark, USA.

2017. *Extracting Code Segments and Their Descriptions from Research Articles*, 14th International Conference on Mining Software Repositories (MSR), Paper Presentation Talk, Buenos Aires, Argentina.

2017. *What Information about Code Snippets Is Available in Different Software-Related Documents? An Exploratory Study*, CRA-W Grad Cohort Workshop, Poster Presentation, Washington D.C., USA.

2015. *Exploring the Generality of a Java-based Loop Action Model for the Quorum Programming Language*, University of Delaware, PhD Prelims Presentation Talk, Newark, USA.

Teaching Experience

DEPARTMENT OF COMPUTER SCIENCE, DREXEL UNIVERSITY

Spring 2023	**CS T680: Software Analytics (2 sections)**, Instructor		*Enrollment:50*
Fall 2022	**SE 181: Introduction to Software Engineering and Development**, Instructor		*Enrollment:55*
Spring 2022	**SE 181: Introduction to Software Engineering and Development**, Instructor		*Enrollment:55*
Fall 2021	**SE 181: Introduction to Software Engineering and Development**, Instructor		*Enrollment:85*

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES, UNIVERSITY OF DELAWARE

Summer 2019	**CISC 181: Introduction to Computer Science II**, Instructor
Fall 2018	**CISC 367: Intro to Computer Science Research**, Substitute Instructor
Spring 2018	**CISC 667: Communication Skills for CS Researchers**, Substitute Instructor
Fall 2017	**CISC 879: Text Analysis for Software Engineering**, Substitute Instructor
Spring 2016	**CISC 474: Advanced Web Technologies**, Teaching Assistant
Fall 2015	**CISC 103: Web Applications using Computer Science**, Teaching Assistant
Spring 2015	**CISC 106: General Computer Science for Engineers** , Teaching Assistant
Fall 2014	**CISC 181: Introduction to Computer Science II**, Teaching Assistant

Student Research Mentoring

DISSERTATION COMMITTEE CHAIR

WI'23-Present   **Ramtin Ehsani**, Ph.D. in CS, Drexel University

FA'22-Present   **Amirali Sajadi**, Ph.D. in CS, Drexel University

DISSERTATION COMMITTEE MEMBER

2022-Present   **Sergey Matskevich**, Drexel University

2022-Present   **Jason Lefever**, Drexel University

UNDERGRADUATE MENTEES

WI' 2023   **Vanessa Martinez**, Drexel University (Pathway to SuperNova Research Fellows program)
Analysis of human and social aspects in software engineering

2022   **Thomas Do**, Drexel University (Pathway to SuperNova Research Fellows program)
Analysis of human aspects in software engineering

2021-2022   **Yashasvi Jain**, Drexel University
Analysis of emotions in developer communication channels in FOSS projects

2020   **Kevin Mason**, University of Delaware
Data analysis of software developer chat conversations

2019-2020   **Brian Phillips**, University of Delaware
Data analysis and case study of software developer communications

2019-2020   **Humpher Owusu**, University of Delaware
Data analysis and case study of software developer communications

2018   **Minji Kong**, University of Delaware
Qualitative analysis of novice developers' focus in Stack Overflow [JSS '2020']

2017   **Qilin Ma**, University of Delaware
Research tool development for mining software-related Q&A forums

2016   **Benjamin Gause**, University of Delaware
Automatic extraction of code descriptions from research articles [MSR '2017']

2016   **Hunter Hedinger**, University of Delaware
Automatic extraction of code descriptions from research articles [MSR '2017']

Professional Service

ACADEMIC SERVICE

Editorial Board

2021 - Present   Publicity Chair, Journal of Systems and Software (JSS)

Organizing Committee

2023   Diversity and Inclusion co-Chair, Intl. Conf. on Mining Software Repositories (MSR)

2022   PC co-Chair, 1st Intl. Workshop on Recruiting Participants for Empirical SE (RoPES)

2022 Sessions Chair, Intl. Conf. on Software Engineering (ICSE)

2022 Sessions Chair, Intl. Conf. on Mining Software Repositories (MSR)

2022 Social Media Chair, Intl. Conf. on Mining Software Repositories (MSR)

2021 Sessions co-host, Intl. Conf. on Automated Software Engineering (ASE)

2020 Social Media Chair, Intl. Conf. on Mining Software Repositories (MSR)

Program Committee

2024 Intl. Conf. on Software Engineering (ICSE), Technical Track

2023 ACM Conf. on the Foundations of Software Engineering (ESEC/FSE), Technical Track

2023 Intl. Conf. on Software Engineering (ICSE), SEIP Track

2023 Intl. Conf. on Mining Software Repositories (MSR), Technical Track

2023 Intl. Workshop on Natural Language based Software Engineering (NLBSE), Research Track

2022 Intl. Conf. on Mining Software Repositories (MSR), Technical Track

2022 Intl. Conf. on Software Analysis, Evolution, and Reengineering (SANER), ERA Track

2022 Intl. Conf. on Software Engineering (ICSE), SEET Track

2021 Intl. Conf. on Software Maintenance and Evolution (ICSME), Tool Demo Track

2021 Intl. Conf. on Mining Software Repositories (MSR), Mining Challenge Track

2021 Intl. Conf. on Software Analysis, Evolution, and Reengineering (SANER), ERA Track

Journal Reviewer

JSS Journal of Systems and Software , Elsevier

TSE Transactions on Software Engineering, IEEE

EMSE Empirical Software Engineering, Springer

TOSEM Transactions on Software Engineering and Methodology, ACM

External Reviewer

2018 Reviewer, Journal of Software: Practice and Experience

2017 Reviewer, ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)

DEPARTMENT AND UNIVERSITY SERVICE ACTIVITIES at Drexel University

2022-2023 **Committee Member,** Dept. of CS Faculty Recruiting Committee

2022-2023 **Committee Member,** Dept. of CS Graduate Software Engineering Committee

2022-2023 **Committee Member,** Dept. of CS Undergraduate Software Engineering Committee

2021-2022 **Committee Member,** Dept. of CS Faculty Recruiting Committee

2021-2022 **Committee Member,** Dept. of CS Graduate Software Engineering Committee

2021-2022 **Committee Member,** Dept. of CS Undergraduate Software Engineering Committee

2022 **Faculty Volunteer**, Women in Tech Reception, Drexel University

2020 **Participant**, Grace Hopper Celebration of Women in Computing, University of Delaware

2016 - 2017 **Founder and Chair**, University of Delaware ACM-W Student Chapter

2015 - 2016 **Vice-Chair**, CISters, Women in Computer Science, University of Delaware

2015 **Mentor**, Grace Hopper Celebration of Women in Computing, University of Delaware

2015 - 2016 **Technical Administrator**, Indian Graduate Student Association, University of Delaware

Leadership and other Professional Development

2022 **Attendee**, ICSE New Faculty Symposium

2022 **Attendee**, NSF CAREER Workshop

2021 **Panelist and Recruiting Faculty**, CS[-ish] PhD Recruiting Event

2021 **Contributor**, ACM SIGSOFT Empirical Standards for Repository Mining

2021 **Attendee**, ICSE New Faculty Symposium

2021 **Attendee**, NSF Virtual Grants Conference

Professional Memberships and Affiliations

- Lifetime Member, Association for Computing Machinery (ACM)   *Member since: 2016*
- Member, Institute of Electrical and Electronics Engineers (IEEE)   *Member since: 2023*
- Member, Association for Computing Machinery, Special Interest Group on Software Engineering (ACM-SIGSOFT)
- Member, Association for Computing Machinery, Women (ACM-W)

Industry Experience

QA Engineer   *Integral Development Corp.*
2013–2014   *Bangalore, India*
Domain: Foreign Exchange Trading

- Performed Web-based Testing, Functional and Regression Testing of in-house Foreign Exchange Trading tool, and ensured adherence to quality norms throughout the testing process.
- Performed debugging of multiple logs of application workflows for failed scenarios.
- Contributed to building the in-house automation test framework using Groovy.

Software Engineer   *Theorem Private Ltd.*
2012–2013   *Bangalore, India*
Domain: Computational Advertising

- Single point of contact for the testing team of BRT (Business Response Team), which handled bug/enhancement requests from production. Analyzed software requirement specifications, prepared test plans, test scenarios (using TestLink), created and executed test cases, logged and tracked defects in JIRA and Bugzilla.
- Performed Functional and Regression Testing for the user interface to validate software component functionalities.
- Performed Scoping and estimated the timeline of the project, considering the efforts and number of resources available for a particular production release.

Project Engineer   *Wipro Technologies*
2009-2012   *Bangalore, India*
Domain: Online equity trading

- Developed the automation suite for regression testing and debugging of Perl/Shell scripts to run batch processes.
- Created and executed test cases, identified and logged defects/bugs using Clear Quest.
- Performed Sanity testing for new builds & version controlling using Clear-Case.

Domain: Multi Functional Peripheral firmware testing

- Created test plans and test sessions in QC, performed testing on builds - both in development as well as delivery phase using in-house testing tools HP DSS, HP Web Jet Admin.
- Found critical defects through ad-hoc/ exploratory testing, reviewed and fixed bugs in the source code.
- Performed build qualification with Smoke & Sanity testing.

References

Available on request