Oscar Chaparro

May 9th, 2024

Contact Information

William & Mary
Department of Computer Science
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Research Interests

Software Engineering: software maintenance and evolution, program comprehension, refactoring, software quality, developers' productivity, text analysis applied to software engineering, software supply chain management, and legal aspects of software engineering.

Education

- **Ph.D. in Software Engineering**, Aug. 2019
  The University of Texas at Dallas, Richardson, TX, USA
  Dissertation: Automated Analysis of Bug Descriptions to Support Bug Reporting and Resolution
  Advisor: Dr. Andrian Marcus

- **M.Eng. in Systems Engineering and Computing**, Aug. 2013
  Universidad Nacional de Colombia, Bogotá, Colombia
  Thesis: Semiautomatic Reverse Engineering Tool for Oracle Forms Information Systems

- **B.Eng. in Systems Engineering**, June 2010
  Universidad Nacional de Colombia, Bogotá, Colombia
  Thesis: Software Visualization in Maintenance Processes: A General Overview

Professional Experience

- **Assistant Professor**, Aug. 2019 – Present
  Department of Computer Science, William & Mary (W&M), Williamsburg, VA, USA

- **Research/Teaching Assistant**, Aug. 2014 – Aug. 2019
  Department of Computer Science, The University of Texas at Dallas, Richardson, TX, USA

- **Research Assistant**, May – July 2014
  Department of Computer Science, Wayne State University, Detroit, MI, USA

- **Software Developer and R&D Leader**, Oct. 2011 – July 2013
  ITC Soluciones Tecnológicas SAS, Bogotá, Colombia

- **Software Developer**, Aug. 2009 – Oct. 2011
  IT Osmosys LTDA, Bogotá, Colombia

Honors and Awards

- **Distinguished Reviewer Award,** at the 46th ACM/IEEE International Conference on Software Engineering (**ICSE'24**), 2024

- **NSF CAREER Award**, CISE CCF Software and Hardware Foundations (SHF) Program, 2023

- **Distinguished Reviewer Award,** at the 39th IEEE International Conference on Software Maintenance and Evolution (**ICSME'23**), 2023

- **Distinguished Service Award,** at the IEEE/ACM 2nd International Workshop on Natural Language-Based Software Engineering (**NLBSE'23**), 2023

- **Distinguished Reviewer Award,** at the 31st IEEE/ACM International Conference on Program Comprehension (**ICPC'23**), 2023

- **Distinguished Reviewer Award,** at the 30th IEEE/ACM International Conference on Program Comprehension (**ICPC'22**), 2022

- **Distinguished Reviewer Award,** at the 37th IEEE International Conference on Software Maintenance and Evolution (I**CSME'21**), 2021

- **ACM SIGSOFT Distinguished Paper Award,** at the 42nd IEEE/ACM International Conference on Software Engineering (**ICSE'20**), 2020

- **David Daniel Thesis Award,** The University of Texas at Dallas, 2020

- **ACM SIGSOFT Distinguished Paper Award**, at the 27th ACM Joint Meeting on the Foundations of Software Engineering (**ESEC/FSE'19**), 2019

- **IEEE TCSE Distinguished Paper Award**, at the 33rd IEEE International Conference on Software Maintenance and Evolution (**ICSME'17**), 2017

- **NSF Travel Grants** for **ICSE'16/17**, **ICSME'16**, and **SWAN'17**

- **Thomas C. Rumble graduate fellowship** ($20,000), Wayne State University, 2013

- **Master's Thesis Laureate Distinction**, Universidad Nacional de Colombia, 2012

- **Honor Enrollment** (M.Eng.), Universidad Nacional de Colombia, 2011

- **Honor Enrollment** (B.Eng.), Universidad Nacional de Colombia, 2007, 2010

Research Funding

- **NSF, CAREER: Informed Decision Making for Software Change (CCF-2239107),** Sole PI, $550,091, June 1/2023 – May 31/2028

- **NSF, DASS: Enabling Comprehensive and Interactive Open Source Software License Compliance (CCF-2217733),** co-PI (with Denys Poshyvanyk and Laura Heymann from W&M), $750,000 ($262,280 own share), Oct 1/2022 - Sept 30/2025

- **NSF, Collaborative Research: SHF: Medium: Bug Report Management 2.0 (CCF-1955853),** co-PI (with Denys Poshyvanyk from W&M, Andrian Marcus from GMU, and Kevin Moran from UCF), $1,200,000, Oct 1/2020 - Sept 30/2024, W&M and GMU budget: $791,321 ($261,881 own share)

- **Dissertation Research Award** ($5,000), The University of Texas at Dallas, 2018

Grant Proposals Under Review

- **NSF, Collaborative Research: SHF: Small: Verification-guided Assessment and Reduction of Code Complexity,** co-PI (with Martin Kellogg from NJIT), pending, $600,000, July 1/2024 – June 30/2027

Peer-reviewed Journal Publications

1. C. Bernal-Cárdenas, N. Cooper, M. Havranek, K. Moran, **O. Chaparro**, D. Poshyvanyk, and A. Marcus, "Translating Video Recordings of Complex App UI Usages into Replayable Scenarios," in *IEEE Transactions on Software Engineering (TSE)*, 2023, vol. 49, no. 4, pp. 1782-1803

2. **O. Chaparro**, J. M. Florez, and A. Marcus, "Using Bug Descriptions to Reformulate Queries during Text-Retrieval-based Bug Localization," in *Empirical Software Engineering (EMSE)*, Springer, 2019, 24(5): 2947-3007.

Peer-reviewed Conference Publications

Underlined authors are current or former W&M students I have mentored.

Full Research Papers

3. N. Wintersgill, T. Stalnaker, L. Heymann, **O. Chaparro**, and D. Poshyvanyk, ""The Law Doesn't Work Like a Computer": Exploring Software Licensing Issues Faced by Legal Practitioners," to appear in *the Proceedings of the 32nd ACM International on the Foundations of Software Engineering (FSE'24)*, 2024

4. Y. Yan, N. Cooper, **O. Chaparro**, K. Moran, and D. Poshyvanyk, "Semantic GUI Scene Learning and Video Alignment for Detecting Duplicate Video-based Bug Reports," in *Proceedings of the 46th ACM/IEEE International Conference on Software Engineering (ICSE'24)*, 2024, pp. 1-13

5. T. Stalnaker, N. Wintersgill, **O. Chaparro**, M. Di Penta, D. German, and D. Poshyvanyk, "BOMs Away! Inside the Minds of Stakeholders: A Comprehensive Study of Bills of Materials for Software Systems," in *Proceedings of the 46th ACM/IEEE International Conference on Software Engineering (ICSE'24)*, 2024, pp. 1-13

6. J. Mahmud, N. De Silva, S. Ali Khan, S. H. Mostafavi, S M H Mansur, **O. Chaparro**, A. Marcus, and K. Moran, "On Using GUI Interaction Data to Improve Text Retrieval-based Bug Localization," in *Proceedings of the 46th ACM/IEEE International Conference on Software Engineering (ICSE'24)*, 2024, pp. 1-13

7. K. Feldman, M. Kellogg, **O. Chaparro**, "On the Relationship Between Code Verifiability and Understandability," in *Proceedings of the 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'23)*, 2023, pp. 211-223

8. Y. Song, J. Mahmud, Y. Zhou, **O. Chaparro**, K. Moran, A. Marcus, and D. Poshyvanyk, "Toward Interactive Bug Reporting for (Android App) End-Users," in *Proceedings of the 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'22)*, 2022, pp. 344-356

9. N. Cooper, C. Bernal-Cárdenas, **O. Chaparro**, K. Moran, and D. Poshyvanyk, "It Takes Two to Tango: Combining Visual and Textual Information for Detecting Duplicate Video-Based Bug Reports," in *Proceedings of the 43rd ACM/IEEE International Conference on Software Engineering (ICSE'21)*, 2021, pp. 957-969

10. J. M. Florez, **O. Chaparro**, and A. Marcus, "Combining Query Reduction and Expansion for Text-Retrieval-Based Bug Localization," in *Proceedings of the 8th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER'21)*, 2021, pp. 166-176

11. C. Bernal-Cárdenas, N. Cooper, K. Moran, **O. Chaparro**, A. Marcus, and D. Poshyvanyk, "Translating Video Recordings of Mobile App Usages into Replayable Scenarios," in *Proceedings of the 42nd ACM/IEEE International Conference on Software Engineering (ICSE'20)*, 2020, pp. 309-321. **ACM SIGSOFT Distinguished Paper Award**

12. **O. Chaparro**, C. Bernal-Cárdenas, J. Lu, K. Moran, A. Marcus, M. Di Penta, D. Poshyvanyk, and V. Ng, "Assessing the Quality of the Steps to Reproduce in Bug Reports," in *Proceedings of the 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'19)*, 2019, pp. 86-96. **ACM SIGSOFT Distinguished Paper Award**

13. **O. Chaparro**, J. M. Florez, U. Singh, and A. Marcus, "Reformulating Queries for Duplicate Bug Report Detection," in *Proceedings of the 26th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER'19)*, 2019, pp. 218–229.

14. **O. Chaparro**, J. M. Florez, and A. Marcus, "Using Observed Behavior to Reformulate Queries during Text Retrieval-based Bug Localization," in *Proceedings of the 33rd IEEE International Conference on Software Maintenance and Evolution (ICSME'17)*, 2017, pp. 376–387. **IEEE TCSE Distinguished Paper Award**

15. **O. Chaparro**, J. Lu, F. Zampetti, L. Moreno, M. Di Penta, A. Marcus, G. Bavota, and V. Ng, "Detecting Missing Information in Bug Descriptions," in *Proceedings of the 11th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'17)*, 2017, pp. 396–407.

16. **O. Chaparro**, J. Aponte, F. Ortega, and A. Marcus, "Towards the Automatic Extraction of Structural Business Rules from Legacy Databases," in *Proceedings of the 19th IEEE Working Conference on Reverse Engineering (WCRE'12)*, 2012, pp. 479–488.

Short Research Papers

17. **O. Chaparro**, "Improving Bug Reporting, Duplicate Detection, and Localization," in *Proceedings of the 39th ACM/IEEE International Conference on Software Engineering (ICSE'17) – Doctoral Symposium*, 2017, pp. 421–424.

18. M. P. Robillard, A. Marcus, C. Treude, G. Bavota, **O. Chaparro**, N. Ernst, M. A. Gerosa, M. Godfrey, M. Lanza, M. Linares-Vásquez, G. C. Murphy, L. Moreno, D. Shepherd, and E. Wong, "On-demand Developer Documentation," in *Proceedings of the 33rd IEEE International Conference on Software Maintenance and Evolution (ICSME'17) – NIER Track*, 2017, pp. 479–483.

19. **O. Chaparro** and A. Marcus, "On the Reduction of Verbose Queries in Text Retrieval Based Software Maintenance," in *Proceedings of the 38th ACM/IEEE International Conference on Software Engineering (ICSE'16) – NIER Track*, 2016, pp. 716–718.

20. **O. Chaparro**, J. M. Florez, and A. Marcus, "On the Vocabulary Agreement in Software Issue Descriptions," in *Proceedings of the 32nd IEEE International Conference on Software Maintenance and Evolution (ICSME'16) – ERA Track*, 2016, pp. 448–452.

21. **O. Chaparro**, G. Bavota, A. Marcus, and M. D. Penta, "On the Impact of Refactoring Operations on Code Quality Metrics," in *Proceedings of the 30th IEEE International Conference on Software Maintenance and Evolution (ICSME'14) – ERA Track*, 2014, pp. 456–460.

Tool Demonstration Papers

22. Y. Song, J. Mahmud, N. De Silva, Y. Zhou, **O. Chaparro**, K. Moran, A. Marcus, and D. Poshyvanyk, "BURT: A Chatbot for Interactive Reporting of Mobile App Bugs," in *Proceedings of the 45th ACM/IEEE International Conference on Software Engineering (ICSE'23) – Tool Demo Track*, 2023, pp. 170-174

23. M. Havranek, C. Bernal-Cárdenas, N. Cooper, **O. Chaparro**, D. Poshyvanyk, and K. Moran, "V2S: a Tool for Translating Video Recordings of Mobile App Usages into Replayable Scenarios," in *Proceedings of the 42nd ACM/IEEE International Conference on Software Engineering (ICSE'21) – Tool demo track*, 2021, pp. 65-68.

24. Y. Song and **O. Chaparro**, "BEE: A Tool for Structuring and Analyzing Bug Reports," in *Proceedings of the 28th ACM Joint Meeting on the Foundations of Software Engineering (ESEC/FSE'20) – Tool demo track*, 2020, pp. 1551-1555.

Book Chapters

25. **O. Chaparro**, F. Cortés, and J. Aponte, "Reverse Engineering in Procedural Software Evolution," Book chapter in *Research Topics in Software Evolution and Maintenance*, Editorial Universidad Nacional de Colombia, 2012, pp. 127–157.

Theses

26. **O. Chaparro Arenas**, "Automated Analysis of Bug Descriptions to Support Bug Reporting and Resolution,", Ph.D. Thesis, The University of Texas at Dallas, 2019

27. **O. Chaparro Arenas**, "Semiautomatic Reverse Engineering Tool on Oracle Forms Information Systems,", M.Eng. Thesis, Universidad Nacional de Colombia, 2012

Other Publications

Underlined authors are current or former W&M students I have mentored.

28. R. Kallis, G. Colavito, A. Al-Kaswan, L. Pascarella, **O. Chaparro**, and P. Rani, "The NLBSE'24 Tool Competition," in *Proceedings of the IEEE/ACM 3rd International Workshop on Natural Language-Based Software Engineering (**NLBSE'24**)*, 2024, pp. 1–8.

29. Y. Song and **O. Chaparro**, "Recommending Bug Assignment Approaches for Individual Bug Reports: An Empirical Investigation," arXiv *preprint*, 2023

30. R. Kallis, M. Izadi, L. Pascarella, **O. Chaparro**, and P. Rani, "The NLBSE'23 Tool Competition," in *Proceedings of the IEEE/ACM 2nd International Workshop on Natural Language-Based Software Engineering (**NLBSE'23**)*, 2023, pp. 1–8.

31. R. Kallis, **O. Chaparro**, A. Di Sorbo, S. Panichella, "NLBSE'22 Tool Competition," in *Proceedings of the IEEE/ACM 1st International Workshop on Natural Language-Based Software Engineering (**NLBSE'22**)*, 2022, pp. 25–28.

Papers Under Review

Underlined authors are current or former W&M students I have mentored.

1. A. Saha, Y. Song, J. Mahmud, Y. Zhou, K. Moran, and **O. Chaparro**, "Toward the Automated Localization of Buggy Mobile App UIs from Bug Descriptions," **major revision** under review at *the 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis (**ISSTA'24**)*, 2024

2. J. Zappin, T. Stalnaker, **O. Chaparro**, and D. Poshynanyk, "When Quantum Meets Classical: Characterizing Hybrid Quantum-Classical Issues Discussed in Developer Forums," under review at *the 47th ACM/IEEE International Conference on Software Engineering (**ICSE'25**)*, 2025

3. T. Stalnaker, N. Wintersgill, **O. Chaparro**, L. A. Heymann, M. Di Penta, D. M. German, and D. Poshynanyk, "Licensing and Copyright Issues in Using Generative AI for Coding: A Practitioner Perspective," under review at *the 47th ACM/IEEE International Conference on Software Engineering (**ICSE'25**)*, 2025

4. Y. Zhou, M. Miao, V. Birsan, **O. Chaparro**, S. Wei, and A. Marcus, "Towards the Automated Identification of Data Constraints in Software Documents," under review at *the 47th ACM/IEEE International Conference on Software Engineering (**ICSE'25**)*, 2025

5. A. Saha and **O. Chaparro,** "Decoding the Issue Resolution Process Documented in Issue Reports: A Case Study of Mozilla Firefox," under review at the *40th IEEE International Conference on Software Maintenance and Evolution (**ICSME'24**)*, 2024

Invited Talks

- Automated Bug Report Management
  Virginia Commonwealth University (VCU), Richmond VA
  October 27th, 2023

- Automated Bug Report Management
  Universidad Nacional de Colombia (UNAL), Bogotá, Colombia

Virtual, December 3rd, 2021

- Automated Bug Report Management
  Universidad de los Andes (UNIANDES), Bogotá, Colombia
  Virtual, November 22nd, 2021

- Assessing the Quality of the Steps to Reproduce in Bug Reports
  At the 13th Innovations in Software Engineering Conference (ISEC'20)
  Jabalpur, M.P., India, February 28th, 2020

Conference Talks and Posters

- BURT: A Chatbot for Interactive Bug Reporting (Talk)
  At the 45th IEEE/ACM International Conference on Software Engineering (**ICSE'23**)
  Melbourne, Australia, May 2023

- Combining Query Reduction and Expansion for Text-Retrieval-Based Bug Localization (Talk)
  At the 8th IEEE International Conference on Software Analysis, Evolution, & Reengineering (**SANER'21**)
  Virtual conference, March 2021

- Detecting Missing Information in Bug Descriptions (Talk and Poster)
  At the 11th ACM Joint Meeting on Foundations of Software Engineering (**ESEC/FSE'17**)
  Paderborn, Germany, Sept. 2017

- Improving Bug Reporting, Duplicate Detection, and Localization (Talk)
  At the 39th ACM/IEEE International Conference on Software Engineering (**ICSE'17**)
  Buenos Aires, Argentina, May 2017

- On the Vocabulary Agreement in Software Issue Descriptions (Talk and Poster)
  At the 32nd IEEE International Conference on Software Maintenance and Evolution (**ICSME'16**)
  Raleigh, NC, USA, Oct. 2016

- On the Reduction of Verbose Queries in Text Retrieval-based Software Maintenance (Talk and Poster)
  At the 38th ACM/IEEE International Conference on Software Engineering (**ICSE'16**)
  Austin, TX, USA, May 2016

- On the Impact of Refactoring Operations on Code Quality Metrics (Talk and Poster)
  At the 30th IEEE International Conference on Software Maintenance and Evolution (**ICSME'14**)
  Victoria, BC, Canada, Sept. 2014

- Towards the Automatic Extraction of Structural Business Rules from Legacy Databases (Talk)
  At the 19th IEEE Working Conference on Reverse Engineering (**WCRE'12**)
  Kingston, ON, Canada, Oct. 2012

Teaching Experience

- **Assistant Professor** at William & Mary
  Courses:
  CSCI 303 – Algorithms (Undergraduate course), Spring 2020-2024
  CSCI 645 – Software Maintenance and Evolution (Graduate course), Fall 2023
  CSCI 680 – Software Maintenance and Evolution (Graduate course), Fall 2019-2022

- **Teaching Assistant** at The University of Texas at Dallas
  Courses:
  CS/SE 6356 – Software Maintenance, Evolution, and Re-Engineering (Graduate course), Fall 2016-2018
  CS/SE 6301 – Software Analysis and Comprehension (Graduate course), Spring 2016
  CS/SE 3354 – Software Engineering (Undergraduate course), Spring 2016 and Fall 2016, 2018
  CS/SE 3345 – Data Structures and Introduction to Algorithmic Analysis (Undergraduate course), Fall 2017

Student Supervision and Mentoring

All mentored students are from William & Mary

Current Ph.D. Students

- Yang Song (Spring 2020 – Spring 2024, **dissertation defense scheduled on May 13th, 2024**)
  Dissertation: *Automated Bug Report Management to Enhance Software Development*

- Trevor Stalknaker (Fall 2021 – Expected: Spring 2026)
  Co-advised with Denys Poshyvanyk
  Awards*:* 2023-2025 VSGC Graduate Research Fellowship

- Nathan Wintersgill (Fall 2021 – Expected: Spring 2026)
  Co-advised with Denys Poshyvanyk

- Antu Saha (Spring 2022 – Expected: Fall 2026)

- Nadeeshan De Silva (Fall 2022 – Expected: Spring 2027)

Current M.Sc. Students

- Grant Enderson (Fall 2023 – Summer 2024)
  Research project: *AI-Assisted Generation of Software Bills of Materials for Python Projects*

Past M.Sc. Students

- Trevor Stalknaker (Fall 2021 – Spring 2023)
  Co-advised with Denys Poshyvanyk
  Thesis: *A Comprehensive Study of Bills of Materials for Software Systems*
  First position after graduation: Ph.D. Student at William & Mary

- Nathan Wintersgill (Fall 2021 – Fall 2023)
  Co-advised with Denys Poshyvanyk
  Thesis: *Exploring Software Licensing Issues Faced by Legal Practitioners*
  First position after graduation: Ph.D. Student at William & Mary

Past B.Sc. Students

- Kobi Feldman (Spring 2022 – Spring 2023)
  Research project: *On the Relationship Between Code Verifiability and Understandability*

Thesis Committee Member

- David Nader, Ph.D., William & Mary – Advisor: Denys Poshyvanyk

- Junayed Mahmud, Ph.D., University of Central Florida – Advisor: Kevin Moran

- Aaron Harris, M.Sc./Ph.D., William & Mary – Advisor: Denys Poshyvanyk

- Dipin Khati, Ph.D., William & Mary – Advisor: Denys Poshyvanyk

- Daniel Rodriguez, Ph.D., William & Mary – Advisor: Denys Poshyvanyk

- Sebastian Velasco, Ph.D., William & Mary – Advisor: Denys Poshyvanyk

- Yanfu Yan, Ph.D., William & Mary – Advisor: Denys Poshyvanyk

- Nathan Cooper, Ph.D. (2023), William & Mary – Advisor: Denys Poshyvanyk

- Madeleine Havranek, B.Sc. (2022), William & Mary – Advisor: Denys Poshyvanyk

- Carlos Bernal-Cárdenas, Ph.D. (2022), William & Mary – Advisor: Denys Poshyvanyk

- Andrés Wilches, M.Eng. (2017), Universidad Nacional de Colombia, Colombia – Advisor: Jairo Aponte

Professional Service

Editor of Journal Special Issues

- Co-editor of NLBSE'22 special issue, Journal of Science of Computer Programming (**SCP**), Elsevier, 2022

Organizing Committee Member

- 33rd ACM International Conference on the Foundations of Software Engineering (**FSE'25**): Proceedings co-chair
- 1st Eastern Atlantic Students in Software Engineering Colloquium (**ESSEC'24**): Local arrangements chair
- 3rd International Workshop on Natural Language-based Software Engineering (**NLBSE'24**): Tool Competition and Tool Demonstration co-chair
- 39th IEEE International Conference on Software Maintenance and Evolution (**ICSME'23**): Registered Reports co-chair
- 7th Student Contest on Software Engineering (**SCORE'23**), co-located with **ICSE'23**: Contest co-chair
- 2nd International Workshop on Natural Language-based Software Engineering (**NLBSE'23**): Tool Competition co-chair
- 1st International Workshop on Natural Language-based Software Engineering (**NLBSE'22**): Tool Competition co-chair
- 2nd Software Documentation Generation Challenge (**DocGen2 - 2020**): Publicity co-chair
- 3rd International Workshop on Dynamic Software Documentation (**DySDoc3 - 2018**): Data and Publicity co-chair

Program Committee Member

- 33rd ACM International Conference on the Foundations of Software Engineering (**FSE'25**): Research Track
- 40th IEEE International Conference on Software Maintenance and Evolution (**ICSME'24**): New Ideas and Emerging Results Track
- 46th ACM/IEEE International Conference on Software Engineering (**ICSE'24**): Research Track
- 39th IEEE International Conference on Software Maintenance and Evolution (**ICSME'23**): Research Track
- 31st IEEE/ACM International Conference on Program Comprehension (**ICPC'23**): Research Track
- 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE'23**): Research Track
- 45th ACM/IEEE International Conference on Software Engineering (**ICSE'23**): Research Track
- 44th ACM/IEEE International Conference on Software Engineering (**ICSE'22**): Poster Track
- 19th IEEE Working Conference on Mining Software Repositories (**MSR'22**): Data/Tool Showcase Track
- 30th IEEE/ACM International Conference on Program Comprehension (**ICPC'22**): Research Track
- 5th IEEE/ACM International Workshop on Refactoring (**IWOR'21**): Research Track
- 37th IEEE International Conference on Software Maintenance and Evolution (**ICSME'21**): Research Track and New Ideas and Emerging Results Track
- 36th IEEE/ACM International Conference on Automated Software Engineering (**ASE'21**): Research Track
- 28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE'20**): Student Research Competition

- 36th IEEE International Conference on Software Maintenance and Evolution (**ICSME'20**): Tool Demo and Doctoral Symposium Tracks
- 35th IEEE/ACM International Conference on Automated Software Engineering (**ASE'20**): Tool Demo Track
- 28th IEEE/ACM International Conference on Program Comprehension (**ICPC'20**): Research Track
- 17th IEEE Working Conference on Mining Software Repositories (**MSR'20**): Data Showcase Track
- 27th IEEE International Conference on Software Analysis, Evolution, and Reengineering (**SANER'20**): Late Breaking Ideas Track
- 2nd Software Documentation Generation Challenge (**DocGen2 - 2020**): Challenge and Tool Demo Tracks
- 35th IEEE International Conference on Software Maintenance and Evolution (**ICSME'19**): Short Paper and Tool Demo Tracks
- 3rd International Workshop on Dynamic Software Documentation (**DySDoc3 - 2018**): Challenge Track

Research Paper and Proposal Reviewer

- National Science Foundation (**NSF**), **SHF program** (two panels) – 2020, 2022
- IEEE Transactions on Software Engineering (**TSE**), IEEE CS – 2019-2022
- ACM Transactions on Software Engineering and Methodology (**TOSEM**), ACM – 2022
- Empirical Software Engineering: An International Journal (**EMSE**), Springer – 2019-2022
- Journal of Systems and Software (**JSS**), Elsevier – 2019-2022
- Journal of Software: Evolution and Process (**JSEP**), John Wiley & Sons – 2024
- Automated Software Engineering (**AUSE**), Springer – 2021
- Software Quality Journal (**SQJ**), Springer – 2019
- IEEE Software, IEEE – 2024
- ACM/IEEE International Conference on Software Engineering (**ICSE**) – 2015, 2017, 2020
- IEEE International Conference on Software Maintenance and Evolution (**ICSME**) – 2015, 2016, 2019
- IEEE International Conference on Program Comprehension (**ICPC**) – 2016
- IEEE International Conference on Software Analysis, Evolution, and Reengineering (**SANER**) – 2015/16
- IEEE Working Conference on Mining Software Repositories (**MSR**) – 2015, 2016

Conference Session Chair

- ACM/IEEE International Conference on Software Engineering (**ICSE**): 2020, 2023, 2024
- IEEE International Conference on Software Maintenance and Evolution (**ICSME**): 2020, 2023

Student Volunteer

- ACM/IEEE International Conference on Software Engineering (**ICSE**) – 2016, 2017
- ACM Joint Meeting on the Foundations of Software Engineering (**ESEC/FSE**) – 2017

Service at William & Mary

Service to the College and the School of Arts & Sciences

- Graduate research symposium committee: 2020
- Distinguished thesis/dissertation awards committee: 2021-2023
- Sanderson mentoring awards committee: 2024
- Freshmen advisor, academic advising program: 2020-2024

Service to the Computer Science Department

- Graduate recruiting committee: 2021-2023
  - **Chair of the Computer Science Symposium for Graduate Studies: 2023**
- Colloquium committee: 2020-2021, 2024
  - **Chair of the Colloquium committee: 2023-2024**
- Graduate admissions committee: 2020-2022
- Diversity, equity, and inclusion committee: 2021-2022
- Faculty recruiting committee: 2021-2022
- Awards and prizes committee: 2021
- Web presence committee: 2022
- PBK Recommendation Letters for CS majors: 2021 – 2023
- Major advisor: 2020 – 2024
- Jury at the CS TribeHacks Hackathon: 2021 - 2023

Professional Memberships

- IEEE/IEEE Computer Society (Member since 2012)
- ACM/ACM Special Interest Group on Software – SIGSOFT (Member since 2016)