

## Gregory James Gay

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### Research Interests:

Automated software testing and analysis, search-based software engineering, automated test generation, data analytics, optimization, information retrieval.

### Teaching Interests:

Software engineering, software testing, software verification & validation, software design principles, artificial intelligence, data structures, programming languages.

### Education:

- Ph.D. Computer Science, University of Minnesota, Minneapolis, Minnesota, 2015.  
Advisor: Dr. Mats Heimdahl.  
Thesis title: *Steering Model-Based Oracles to Admit Real Program Behaviors*.
- M.S. Computer Science, West Virginia University, Morgantown, West Virginia, 2010.  
Advisor: Dr. Tim Menzies.  
Thesis title: *Robust Optimization of Non-Linear Requirements Models*.
- B.S. Computer Science, West Virginia University, Morgantown, West Virginia, 2008.

### Professional Experience:

**2015–Present** Assistant Professor, University of South Carolina, Columbia, SC.  
Department of Computer Science & Engineering

**2010–2015** Research Assistant, University of Minnesota, Minneapolis, MN.  
Critical Systems Group (under Mats Heimdahl)

**2010** Visiting Researcher, Chinese Academy of Sciences, Beijing, PRC.  
Lab for Internet Software Technologies, Institute of Software

**2009** Intern, National Aeronautics and Space Administration (NASA), Mountain View, CA.  
Robust Software Engineering Group, Ames Research Center

**2007–2010** Research Assistant, West Virginia University, Morgantown, WV.  
Modeling Intelligence Lab (under Tim Menzies)

**2006–2007** Research Assistant, West Virginia University, Morgantown, WV.  
Virtual Environments Lab (under Francis Van Scoy)

**2005** SEAP Intern, National Aeronautics and Space Administration (NASA), Fairmont, WV.  
Independent Verification & Validation Center

## Teaching Experience:

For University of South Carolina courses, review scores are out of 5 points.

**Spring 2019** Instructor, Software Engineering (Undergraduate).

Reviews: TBD

**Fall 2018** Instructor, Software Architecture (Graduate).

Reviews: On Clear Presentation - 5.00, On Preparedness - 5.00, On Effective Use of Time - 5.00, On Enthusiasm - 4.75, On Facilitating Understanding - 4.75, On Clear Answering of Questions - 4.75, On Respect - 5.00

**Spring 2018** Instructor, Software Testing and Quality Assurance (Graduate).

Reviews: On Clear Presentation - 5.00, On Preparedness - 4.95, On Effective Use of Time - 5.00, On Enthusiasm - 4.90, On Facilitating Understanding - 4.81, On Clear Answering of Questions - 4.95, On Respect - 5.00

**Fall 2017** Instructor, Seminar on Advances in Computing (Graduate).

**Fall 2017** Instructor, Software Engineering (Graduate).

Reviews: On Clear Presentation - 4.60, On Preparedness - 4.73, On Effective Use of Time - 4.80, On Enthusiasm - 4.60, On Facilitating Understanding - 4.53, On Clear Answering of Questions - 4.87, On Respect - 4.93

**Spring 2017** Instructor, Software Testing and Quality Assurance (Graduate).

Reviews: On Clear Presentation - 4.79, On Preparedness - 4.86, On Effective Use of Time - 4.85, On Enthusiasm - 4.79, On Facilitating Understanding - 4.83, On Clear Answering of Questions - 4.69, On Respect - 4.92

**Fall 2016** Instructor, Software Engineering (Graduate).

Reviews: On Clear Presentation - 4.29, On Preparedness - 4.40, On Effective Use of Time - 4.14, On Enthusiasm - 4.08, On Facilitating Understanding - 4.40, On Clear Answering of Questions - 4.27, On Respect - 4.47

**Spring 2016** Instructor, Seminar on Advances in Computing (Graduate).

Reviews: On Clear Presentation - 4.81, On Preparedness - 4.53, On Effective Use of Time - 4.73, On Enthusiasm - 4.69, On Facilitating Understanding - 4.63, On Clear Answering of Questions - 4.50, On Respect - 4.75

**Spring 2016** Instructor, Software Testing and Quality Assurance (Graduate).

Reviews: On Clear Presentation - 4.55, On Preparedness - 4.55, On Effective Use of Time - 4.55, On Enthusiasm - 4.64, On Facilitating Understanding - 4.55, On Clear Answering of Questions - 4.64, On Respect - 4.55

**Fall 2015** Instructor, Software Engineering (Graduate).

Reviews: On Clear Presentation - 4.85, On Preparedness - 5.00, On Effective Use of Time - 5.00, On Enthusiasm - 4.92, On Facilitating Understanding - 5.00, On Clear Answering of Questions - 5.00, On Respect - 4.92

For University of Minnesota courses, review scores are out of 6 points.

**Spring 2015** Instructor, Software Engineering 1 (Undergraduate/Graduate).

Reviews: On Preparedness - 5.70, On Clear Presentation - 5.22, On Helpful Feedback - 4.97, On Respect - 5.81, On Facilitating Understanding - 4.92, On Stimulating Further Interest in Topic - 4.42

**Fall 2014** Teaching Assistant, Software Engineering 1 (Undergraduate/Graduate).

Reviews: On Preparedness - 5.60, On Clear Presentation - 5.60, On Helpful Feedback - 5.70, On Respect - 5.80, On Facilitating Understanding - 5.20, On Stimulating Further Interest in Topic - 5.10

**Fall 2013** Teaching Assistant, Software Engineering 1 (Undergraduate/Graduate).

Reviews: On Preparedness - 5.40, On Clear Presentation - 5.14, On Helpful Feedback - 5.38, On Respect - 5.62, On Facilitating Understanding - 5.34, On Stimulating Further Interest in Topic - 5.17

**Spring 2013** Teaching Assistant, Software Engineering 2 (Undergraduate/Graduate).

Reviews: On Preparedness - 5.58, On Clear Presentation - 5.58, On Helpful Feedback - 5.67, On Respect - 5.62, On Facilitating Understanding - 5.00, On Stimulating Further Interest in Topic - 4.75

**Fall 2012** Teaching Assistant, Software Engineering 1 (Undergraduate/Graduate).

Reviews: On Preparedness - 5.26, On Clear Presentation - 5.23, On Helpful Feedback - 5.23, On Respect - 5.45, On Facilitating Understanding - 5.29, On Stimulating Further Interest in Topic - 4.97

**Spring 2012** Participant, University of Minnesota Preparing Future Faculty Program.

## **Student Supervision:**

### **Ph.D. Advisor**

**Ongoing** Hussein Almulla, Ph.D. in Computer Science, Estimated Graduation: Fall 2019.

Ying Meng, Ph.D. in Computer Science, Estimated Graduation: Fall 2020.

Peter Mourfield, Ph.D. in Computer Science, Estimated Graduation: Spring 2021.

Alireza Salahirad, Ph.D. in Computer Science, Estimated Graduation: Spring 2020.

Alaleh Torkjazi, Ph.D. in Computer Science, Estimated Graduation: Spring 2021.

### **M.S. Advisor**

**Ongoing** Burl Kenner III, M.S. in Engineering Management, Estimated Graduation: Spring 2019.

Raghu Ram Thota, M.S. in Computer Science, Estimated Graduation: Fall 2019.

**Spring 2018** Srujana Bollina, M.S. in Computer Science.

**Fall 2017** Ying Meng, M.S. in Software Engineering

### **Ph.D. Committee**

**Ongoing** Chao Chen, Ph.D. in Computer Science, Estimated Graduation: Spring 2019.

### **M.S. Committee**

**Fall 2018** George Akhvlediani, M.S. in Computer Science.

### **Independent Study**

**Spring 2018** Hayley Lichtenfels, B.S. in Computer Science.

**Spring 2016** Allen Kanapala, M.S. in Computer Science.

**Summer 2016** Narasimha Chilukuri, M.S. in Software Engineering.

**Summer 2016** Craig Sharp, Ph.D. in Computer Science.

## **Funding:**

**2018–2019** University of South Carolina ASPIRE-1, Investigating the Relationship between Real and Synthetic Software Faults (\$14,959.00).

**2017–2019** National Science Foundation Award CCF-1657299, CRII: SHF: Understanding The Role of Software Test Adequacy Criteria in Search-Based Test Generation (\$173,528.00).

## Awards:

- 2018** Graduate Teaching Award, University of South Carolina (Department of Computer Science & Engineering)
- 2018** Best Presentation, 11<sup>th</sup> International Workshop on Search-Based Software Testing (SBST'18)
- 2016** Challenge Award Winner, 8<sup>th</sup> Symposium on Search-Based Software Engineering (SSBSE'16)
- 2014** Best Presentation, 7<sup>th</sup> International Workshop on Search-Based Software Testing (SBST'14)
- 2010–2013** National Science Foundation Graduate Research Fellowship

## Conference Committees and Chairmanships:

- 2018–Present** Program Committee, Genetic and Evolutionary Computation Conference (GECCO)
- 2017–Present** Steering Committee Deputy Chair, International Workshop on Search-Based Software Testing (SBST).
- 2017–Present** Program Committee, European Conference on the Applications of Evolutionary Computing (EvoSET Track—Nature-inspired algorithms in Software Engineering and Testing).
- 2017–Present** Program Committee, International Conference on Advances in System Testing and Validation Lifecycle (VALID).
- 2017–Present** Program Committee, International Workshop on Search-Based Software Testing (SBST).
- 2017–Present** Program Committee, International Workshop on Software Analytics (SWAN).
- 2016–Present** Steering Committee, Symposium on Search-Based Software Engineering (SSBSE).
- 2016–Present** Program Committee, Symposium on Search-Based Software Engineering (SSBSE).
- 2015–Present** Steering Committee, International Workshop on Search-Based Software Testing (SBST).
- 2020** Program Committee, 42<sup>nd</sup> International Conference on Software Engineering (Poster Track) (ICSE'20).
- 2019** Program Co-Chair, 11<sup>th</sup> Symposium on Search-Based Software Engineering (SSBSE'19).
- 2019** General Chair, 6<sup>th</sup> International Workshop on Requirements Engineering and Testing (RET'19)
- 2019** Program Committee, 34<sup>th</sup> International Conference on Automated Software Engineering (Tool Demonstrations) (ASE'19)
- 2018–2019** Program Committee, 12<sup>th</sup> International Conference on Software Testing, Verification, and Validation (ICST'19)
- 2018–2019** Program Committee, 41<sup>st</sup> International Conference on Software Engineering (Demonstrations Track) (ICSE'19).
- 2018** Program Co-Chair, 5<sup>th</sup> International Workshop on Requirements Engineering and Testing (RET'18)
- 2017–2018** Workshop Co-Chair, 11<sup>th</sup> International Conference on Software Testing, Verification, and Validation (ICST'18).
- 2017** Co-Chair, 4<sup>th</sup> International Workshop on Requirements Engineering and Testing (RET'17).
- 2017** Publicity Co-Chair, Symposium on Search-Based Software Engineering (SSBSE).
- 2016–2017** Steering Committee Chair, International Workshop on Search-Based Software Testing (SBST).
- 2016** Co-Chair, 9<sup>th</sup> International Workshop on Search-Based Software Testing (SBST'16).
- 2016** Program Co-Chair, 3<sup>rd</sup> International Workshop on Requirements Engineering and Testing (RET'16).
- 2015** Co-Chair, 8<sup>th</sup> International Workshop on Search-Based Software Testing (SBST'15).
- 2015** Program Committee, International Workshop on Actionable Analytics for SE (ACTION'15).

**2011–2012** Program Committee, International Conference on Predictive Models in Software Engineering (PROMISE).

**2012** North America Publicity Chair, 27<sup>th</sup> IEEE /ACM International Conference on Automated Software Engineering (ASE'12).

**2012** Web Chair, 20<sup>th</sup> IEEE International Conference on Requirements Engineering (RE'12).

**2008–2010** Web Chair, International Conference on Predictive Models in Software Engineering (PROMISE).

## Journal Publications:

Names in **bold** are supervised students.

1. **Ying Meng**, Gregory Gay, Michael Whalen. Ensuring the Observability of Structural Test Obligations. *IEEE Transactions on Software Engineering*. To appear, 2018. Available online at <http://greggay.com/pdf/18omcdc.pdf>.
2. Amanda Schwartz, Daniel Puckett, **Ying Meng**, Gregory Gay. Investigating Faults Missed by Test Suites Achieving High Code Coverage. *Journal of Systems and Software*. Volume 144. October, 2018. Pages 106-120. Available online at <http://greggay.com/pdf/18mutation.pdf>.
3. Gregory Gay, Sanjai Rayadurgam, Mats P.E. Heimdahl. Automated Steering of Model-Based Test Oracles to Admit Real Program Behaviors. *IEEE Transactions on Software Engineering*. Volume 43, Number 6. June, 2017. Pages 531-555. Available online at <http://greggay.com/pdf/16steering.pdf>.
4. Gregory Gay, Ajitha Rajan, Matt Staats, Michael Whalen, Mats P.E. Heimdahl. The Effect of Program and Model Structure on the Effectiveness of MC/DC Test Adequacy Coverage. *ACM Transactions on Software Engineering and Methodology*. Volume 25, Number 3. August, 2016. Article 25. Available online at <http://greggay.com/pdf/16mcdc.pdf>.
5. Gregory Gay, Matt Staats, Michael Whalen, Mats P.E. Heimdahl. Automated Oracle Data Selection Support. *IEEE Transactions on Software Engineering*. Volume 41, Number 11. November, 2015. Pages 1119-1137. Available online at <http://greggay.com/pdf/15oracles.pdf>.
6. Gregory Gay, Matt Staats, Michael Whalen, Mats P.E. Heimdahl. The Risks of Coverage-Directed Test Case Generation. *IEEE Transactions on Software Engineering*. Volume 41, Number 8. August, 2015. Pages 803-819. Available online at <http://greggay.com/pdf/15covrisks.pdf>.
7. Adam Nelson, Tim Menzies, Gregory Gay. Sharing Experiments Using Open-Source Software. *Software: Practice and Experience*. Volume 41, Number 3. March, 2011. Pages 283–305. Available online at <http://greggay.com/pdf/10ourmine.pdf>.
8. Gregory Gay, Tim Menzies, Misty Davies, and Karen Gundy-Burlet. Automatically Finding the Control Variables for Complex System Behavior. *Automated Software Engineering*. Volume 17, Number 4. December, 2010. Pages 1–30. Available from <http://www.greggay.com/pdf/10tar3.pdf>.
9. Gregory Gay, Tim Menzies, Omid Jalali, Gregory Mundy, Beau Gilkerson, Martin Feather, and James Kiper. Finding Robust Solutions in Requirements Models. *Automated Software Engineering*. Volume 17, Number 1. March, 2010. Pages 87–116. Available from <http://www.greggay.com/pdf/10keys.pdf>.

## Journal Publications Under Submission or in Revision:

10. **Alireza Salahirad**, Gregory Gay. Choosing The Fitness Function for the Job: Automated Generation of Test Suites that Detect Real Faults. *Under revision for Wiley Software Testing, Verification and Reliability*.
11. Duncan Buell, Gregory Gay. Is Technology the Answer? Software Quality Issues in Electronic Voting Systems. *Under submission to Journal of Systems and Software*.

## Conference Publications:

12. **Allen Kanapala**, Gregory Gay. Mapping Class Dependencies for Fun and Profit. *Proceedings of the 10<sup>th</sup> Symposium on Search-Based Software Engineering, Hot Off the Press Track (SSBSE'18)*. Montpellier, France, September 2018. Available from <http://greggay.com/pdf/18coupling.pdf>. *Acceptance Rate Unknown*.
13. Gregory Gay. Detecting Real Faults in the Gson Library Through Search-Based Unit Test Generation. *Proceedings of the 10<sup>th</sup> Symposium on Search-Based Software Engineering, Challenge Track (SSBSE'18)*. Montpellier, France, September 2018. Available from <http://greggay.com/pdf/18gson.pdf>. *Acceptance Rate Unknown*.
14. **Hussein Almula**, **Alireza Salahirad**, Gregory Gay. Using Search-Based Test Generation to Discover Real Faults in Guava. *Proceedings of the 9<sup>th</sup> Symposium on Search-Based Software Engineering, Challenge Track (SSBSE'17)*. Paderborn, Germany, September 2017. Available from <http://greggay.com/pdf/17guava.pdf>. *Acceptance Rate Unknown*.
15. Gregory Gay. Generating Effective Test Suites by Combining Coverage Criteria. *Proceedings of the 9<sup>th</sup> Symposium on Search-Based Software Engineering (SSBSE'17)*. Paderborn, Germany, September 2017. Available from <http://greggay.com/pdf/17ssbse.pdf>. *Acceptance Rate 23% (31 Submitted, 7 Accepted)*
16. Gregory Gay. The Fitness Function for the Job: Search-Based Generation of Test Suites that Detect Real Faults. *Proceedings of the 10<sup>th</sup> IEEE International Conference on Software Testing, Verification, and Validation (ICST'17)*. Tokyo, Japan, March 2017. **Best Paper Nominee**. Available from <http://greggay.com/pdf/17fitness.pdf>. *Acceptance Rate 27% (135 Submitted, 36 Accepted)*
17. Gregory Gay. Challenges in Using Search-Based Test Generation to Identify Real Faults in Mockito. *Proceedings of the 8<sup>th</sup> Symposium on Search-Based Software Engineering, Challenge Track (SSBSE'16)*. Raleigh, NC, USA, October 2016. **Best Paper Winner (Challenge Track)**. Available from <http://greggay.com/pdf/16mockito.pdf>. *Acceptance Rate Unknown*.
18. Dongjiang You, Sanjai Rayadurgam, Michael Whalen, Mats P.E. Heimdahl, Gregory Gay. Efficient Observability-based Test Generation by Dynamic Symbolic Execution. *Proceedings of the 26<sup>th</sup> IEEE International Symposium on Software Reliability Engineering (ISSRE'15)*. Gaithersburg, MD, USA, November 2015. Available from <http://greggay.com/pdf/15issre.pdf>. *Acceptance Rate 32% (172 Submitted, 55 Accepted)*
19. Gregory Gay, Sanjai Rayadurgam, Mats P.E. Heimdahl. Improving the Accuracy of Oracle Verdicts Through Automated Model Steering. *Proceedings of the 29<sup>th</sup> ACM/IEEE International Conference on Automated Software Engineering (ASE'14)*. Vasteras, Sweden, September 2014. Available from <http://greggay.com/pdf/14ase.pdf>. *Acceptance Rate 20% (276 Submitted, 55 Accepted)*
20. Gregory Gay, Sanjai Rayadurgam, Mats P.E. Heimdahl. Steering Model-Based Oracles to Admit Real Program Behaviors. *Proceedings of the 36<sup>th</sup> ACM/IEEE International Conference on Software Engineering, NIER Track (ICSE'14-NIER)*. Hyderabad, India, June 2014. Available from <http://greggay.com/pdf/14nier.pdf>. *Acceptance Rate 24% (146 Submitted, 35 Accepted)*
21. Michael Whalen, Gregory Gay, Dongjiang You, and Mats P.E. Heimdahl. Observable Modified Condition/Decision Coverage. *Proceedings of the 35<sup>th</sup> ACM/IEEE International Conference on Software Engineering (ICSE'13)*. San Francisco, United States, May 2013. Available from <http://greggay.com/pdf/13omcdc.pdf>. *Acceptance Rate 19% (461 Submitted, 85 Accepted)*
22. Matt Staats, Gregory Gay, and Mats P.E. Heimdahl. Automated Oracle Creation Support, or: How I Learned to Stop Worrying About Fault Propagation and Love Mutation Testing. *Proceedings of the 34<sup>th</sup> ACM/IEEE International Conference on Software Engineering (ICSE'12)*. Zurich, Switzerland, May 2012. Available from <http://greggay.com/pdf/12oracle.pdf>. *Acceptance Rate 21% (408 Submitted, 87 Accepted)*

23. Matt Staats, Gregory Gay, Michael Whalen, and Mats P.E. Heimdahl. On the Danger of Coverage Directed Test Case Generation. *Proceedings of the 15<sup>th</sup> International Conference on Fundamental Approaches to Software Engineering (FASE'12)*. Talinn, Estonia, March 2012. Available from <http://greggay.com/pdf/12danger.pdf>. *Acceptance Rate 25% (134 Submitted, 33 Accepted)*
24. Ekrem Kocaguneli, Gregory Gay, Tim Menzies, Ye Yang, and Jacky Keung. When to Use Data from Other Projects for Effort Estimation. Short Paper, *Proceedings of the 25<sup>th</sup> ACM/IEEE International Conference on Automated Software Engineering (ASE'10)*. Antwerp, Belgium, September 2010. Available from <http://greggay.com/pdf/10ccwc.pdf>. *Acceptance Rate 18% (191 Submitted, 34+31 Accepted)*
25. Gregory Gay. A Baseline Method For Search-Based Software Engineering. *Proceedings of the 6<sup>th</sup> International Conference on Predictive Models in Software Engineering (PROMISE'10)*. Banff, Canada, September 2010. Available from <http://greggay.com/pdf/10baseline.pdf>. *Acceptance Rate 36% (53 Submitted, 19 Accepted)*
26. Jia Chen, Ye Yang, Wen Zhang, Gregory Gay. Measuring the Heterogeneity of Crosscompany Datasets. *Proceedings of the 11<sup>th</sup> International Conference on Product Focused Software Development and Process Improvement (PROFES'10)*. Limerick, Ireland, June 2010. Available from <http://greggay.com/pdf/10profes.pdf>. *Acceptance Rate Unknown.*
27. Gregory Gay, Sonia Haiduc, Andrian Marcus, Tim Menzies. On the Use of Relevance Feedback in IR-based Concept Location. *Proceedings of the 25<sup>th</sup> IEEE International Conference on Software Maintenance (ICSM'09)*. Alberta, Canada, September 2009. Available from <http://greggay.com/pdf/09irrf.pdf>. *Acceptance Rate 22% (162 Submitted, 35 Accepted)*
28. Gregory Gay, Tim Menzies, Bojan Cukic, Burak Turhan. How to Build Repeatable Experiments. *Proceedings of the 5<sup>th</sup> International Conference on Predictive Models in Software Engineering (PROMISE'09)*. Vancouver, Canada, May 2009. Available from <http://greggay.com/pdf/09ourmine.pdf>. *Acceptance Rate 48% (36 Submitted, 17 Accepted)*

## Workshop Publications:

29. Gregory Gay. To Call, or Not to Call: Contrasting Direct and Indirect Branch Coverage in Test Generation. *Proceedings of the 11th International Workshop on Search-Based Software Testing (SBST'18)*. Gothenburg, Sweden, May 2018. Available from <http://greggay.com/pdf/18sbstdbc.pdf>. *Acceptance Rate Unknown.*
30. Gregory Gay. Multifaceted Test Suite Generation Using Primary and Supporting Fitness Functions. *Proceedings of the 11th International Workshop on Search-Based Software Testing (SBST'18)*. Gothenburg, Sweden, May 2018. Available from <http://greggay.com/pdf/18sbstposition.pdf>. *Acceptance Rate Unknown.*
31. Gregory Gay, Matt Staats, Michael Whalen, and Mats P.E. Heimdahl. Moving the Goalposts: Coverage Satisfaction is Not Enough. *Proceedings of the 7th International Workshop on Search-Based Software Testing (SBST'14)*. Hyderabad, India, June 2014. Available from <http://greggay.com/pdf/14sbst.pdf>. *Acceptance Rate 53% (19 Submitted, 10 Accepted)*
32. Gregory Gay and Mats P.E. Heimdahl. Towards Community-Assisted Software Engineering Decision Making. *Proceedings of the 2<sup>nd</sup> International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE 2013), "Over the Horizon" track*. San Francisco, California, May 2013. Available from <http://greggay.com/pdf/13raise.pdf>. *Acceptance Rate Unknown.*
33. Tim Menzies, Burak Turhan, Gregory Gay, Ayse Bener, Bojan Cukic and Yue Jiang. Implications of Ceiling Effects in Defect Predictors. *Proceedings of the 4<sup>th</sup> International Workshop on Predictive Models in Software Engineering (PROMISE'08)*. Leipzig, Germany, May 2008. Available from <http://greggay.com/pdf/08ceiling.pdf>. *Acceptance Rate 81% (16 Submitted, 13 Accepted)*

## Other Publications:

34. Markus Borg, Elizabeth Bjarnason, Michael Unterkalmsteiner, Tingting Yu, Gregory Gay, Michael Felderer. Summary of the 4th International Workshop on Requirements Engineering and Testing (RET 2017). *ACM SIGSOFT Software Engineering Notes*. Volume 42, Number 4. January, 2018. Pages 28-31.. Available from <http://greggay.com/pdf/18ret.pdf>.
35. Michael Unterkalmsteiner, Gregory Gay, Michael Felderer, Elizabeth Bjarnason, Markus Borg, Mirko Morandini. Summary of the 3rd International Workshop on Requirements Engineering and Testing (RET 2016). *ACM SIGSOFT Software Engineering Notes*. Volume 41, Number 3. May, 2016. Pages 31-33.. Available from <http://greggay.com/pdf/16ret.pdf>.
36. Gregory Gay, Giuliano Antoniol. 8th International Workshop on Search-based Software Testing (SBST 2015). *Proceedings of the 37<sup>th</sup> International Conference on Software Engineering (ICSE'15)—Workshop Summaries*. Florence, Italy, May 2015. Available from <http://greggay.com/pdf/sbst-summary.pdf>.
37. Gregory Gay. Automated Steering of Model-Based Test Oracles to Admit Real Program Behaviors. *Doctoral Dissertation, University of Minnesota*. Minneapolis, MN, May 2015. Available from <http://greggay.com/pdf/GregoryGayDissertation.pdf>.
38. Gregory Gay and Mats P.E. Heimdahl. Towards Community-Assisted Software Engineering Decision Making. *University of Minnesota Tech Report 13-015*. Minneapolis, MN, April 2013. Available from <http://greggay.com/pdf/13raise.pdf>.
39. Gregory Gay. The Robust Optimization of Non-Linear Requirements Models. *MS Thesis, West Virginia University*. Morgantown, WV, May 2010. Available from [http://greggay.com/pdf/thesis\\_v1.pdf](http://greggay.com/pdf/thesis_v1.pdf).

## Invited Presentations:

1. University of Sheffield. March 2018. Sheffield, UK.  
Invited Talk: The Fitness Function for the Job: Search-Based Generation of Test Suites that Detect Real Faults
2. Queens University, City University of New York. March 2018. Flushing, NY.  
Invited Talk: The Fitness Function for the Job: Search-Based Generation of Test Suites that Detect Real Faults
3. Illinois Institute of Technology. February 2018. Chicago, IL.  
Invited Talk: The Fitness Function for the Job: Search-Based Generation of Test Suites that Detect Real Faults
4. South Carolina Law Review 2016 Symposium. February 2016. Columbia, SC.  
Panelist: The Science of Cyber Attacks
5. West Virginia University. March 2015. Morgantown, WV.  
Invited Talk: Steering Model-Based Oracles to Admit Real Program Behaviors
6. College of William and Mary. March 2015. Williamsburg, VA.  
Invited Talk: Steering Model-Based Oracles to Admit Real Program Behaviors
7. University of South Carolina. February 2015. Columbia, SC.  
Invited Talk: Steering Model-Based Oracles to Admit Real Program Behaviors
8. Concordia University. January 2015. Montreal, QC, Canada.  
Invited Talk: Steering Model-Based Oracles to Admit Real Program Behaviors
9. University of Colorado Denver. March 2014. Denver, CO.  
Invited Talk: Connecting the Dots: Improving the Effectiveness of Testing by Leveraging Artifact Relationships



10. Miami University. February 2014. Oxford, OH.  
Invited Talk: Connecting the Dots: Improving the Effectiveness of Testing by Leveraging Artifact Relationships
11. University of Kentucky. February 2014. Lexington, KY.  
Invited Talk: Connecting the Dots: Improving the Effectiveness of Testing by Leveraging Artifact Relationships
12. California Polytechnic State University. February 2014. San Luis Obispo, CA.  
Invited Talk: Connecting the Dots: Improving the Effectiveness of Testing by Leveraging Artifact Relationships
13. Oakland University. January 2014. Oakland, MI.  
Invited Talk: Connecting the Dots: Improving the Effectiveness of Testing by Leveraging Artifact Relationships
14. Middle Tennessee State University. January 2014. Murfreesboro, TN.  
Invited Talk: Connecting the Dots: Improving the Effectiveness of Testing by Leveraging Artifact Relationships
15. University of Minnesota Graduate Student Colloquium. October 2011. Minneapolis, MN.  
Invited Talk: Software Test Oracles: How I Learned to Stop Worrying and Love Mutation Testing
16. Midwest Verification Day 2011. September 2011. Minneapolis, MN.  
Invited Talk: Towards Oracle Creation Support
17. Tsinghua University School of Software. March 2010. Beijing, PRC.  
Invited Talk: Finding Robust Solutions to Model Optimization Problems
18. Institute of Software, Chinese Academy of Sciences. January 2010. Beijing, PRC.  
Invited Talk: OURMINE: A Toolkit for Sharing Experiments
19. NASA Ames Research Center Summer Intern Talks. August 2009. Mountain View, CA.  
Invited Talk: Automatically finding the control variables for complex system behavior
20. WVU/NETL/ERA Workshop on Digital Preservation of Complex Engineering Data. April 2009. Morgantown, WV. Poster Presentation: Information Retrieval with HAMLET

## Professional Activities:

- 2019–Present** Member, ACM TOSEM Board of Distinguished Reviewers
- 2018–Present** Reviewer, Traffic Injury Prevention
- 2018–Present** Reviewer, Journal of Software: Evolution and Process
- 2017–Present** Member, Empirical Software Engineering Journal Review Board
- 2016–Present** Reviewer, Journal of Systems and Software
- 2016–Present** Reviewer, IEEE Transactions on Evolutionary Computation
- 2016–Present** Reviewer, Journal of Classification
- 2015–Present** Reviewer, Empirical Software Engineering Journal
- 2015–Present** Reviewer, ACM Transactions on Software Engineering and Methodology
- 2014–Present** Reviewer, IEEE Transactions on Software Engineering
- 2014–Present** Reviewer, Software Testing, Verification and Reliability
- 2013–Present** Reviewer, IEEE Software
- 2012–Present** Reviewer, Software Quality Journal

**2010–Present** Reviewer, Automated Software Engineering (journal)  
**2019** Reviewer, IEEE Access  
**2018** Panelist, NSF Panel P181594 (CRI-SW)  
**2018** Reviewer, IEEE Transactions on Reliability  
**2018** Reviewer, Information and Software Technology  
**2018** Reviewer, Applied Soft Computing Journal  
**2017** Reviewer, IET Software  
**2017** Reviewer, The Computer Journal  
**2017** Reviewer, Formal Methods in System Design  
**2016** Reviewer, 2017 IFAC World Conference  
**2014** Reviewer, Automated Software Engineering (conference)  
**2014** Reviewer, Journal of Aerospace Information Systems  
**2013** Student Volunteer, International Conference on Software Engineering  
**2012** Reviewer, Formal Methods for Industrial Critical System  
**2012** Student Volunteer, 2012 International Symposium on Software Testing and Analysis  
**2008–2009** President, ACM West Virginia University Student Chapter  
**2007–2008** Vice-President, ACM West Virginia University Student Chapter  
**2007–2010** Member, West Virginia University Engineering Student Advisory Council

#### **Affiliate:**

- Member of IEEE, ACM, Upsilon Pi Epsilon.