

# Christoph Treude, PhD

School of Computing and Information Systems  
Melbourne Connect  
University of Melbourne  
Australia

Email: [christoph.treude@unimelb.edu.au](mailto:christoph.treude@unimelb.edu.au)  
URL: <http://www.ctreude.ca/>

## Research Interests

Empirical Software Engineering, Natural Language Processing, Computer Supported Collaborative Work, Human Computer Interaction, Computer Security, Software Documentation, Social Media

## Experience

**Since 2021:** Senior Lecturer, *University of Melbourne, Australia*  
**2018 – 2020:** ARC DECRA Fellow, *University of Adelaide, Australia*  
**2016 – 2021:** Senior Lecturer, *University of Adelaide, Australia*  
**2015:** Researcher, *Universidade de São Paulo, Brazil*  
**2014 – 2015:** Researcher, *Universidade Federal do Rio Grande do Norte, Brazil*  
**2012 – 2014:** Postdoctoral Researcher, *McGill University, Canada*  
**Supervisor:** Dr. Martin Robillard  
**2007 – 2012:** PhD in Computer Science, *University of Victoria, Canada*  
**Supervisors:** Dr. Margaret-Anne Storey and Dr. Jens Weber

## Education

**2007 – 2012:** PhD in Computer Science, *University of Victoria, Canada*  
**2005 – 2006:** Exchange student, *University of British Columbia, Canada*  
**2000 – 2007:** *Diplom* in Computer Science/Management Information Systems, *Universität Siegen, Germany*

## Publications

2022

N. Shimada, T. Xiao, H. Hata, **C. Treude**, K. Matsumoto. GitHub Sponsors: Exploring a New Way to Contribute to Open Source. In *ICSE '22: Proceedings of the 44th International Conference on Software Engineering*, 2022. To appear.

N. Zhang, C. Liu, X. Xia, **C. Treude**, Y. Zou, D. Lo, and Z. Zheng. ShellFusion: Answer Generation for Shell Programming Tasks via Knowledge Fusion. In *ICSE '22: Proceedings of the 44th International Conference on Software Engineering*, 2022. To appear.

M. Liu, X. Peng, A. Marcus, **C. Treude**, J. Xie, H. Xu, and Y. Yang. How to Formulate Specific How-To Questions in Software Development? In *ESEC/FSE '22: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2022. To appear. **(Acceptance rate: 22%)**

Y. Jiang, X. Su, **C. Treude**, and T. Wang. Hierarchical Semantic-Aware Neural Code Representation. In *Journal of Systems and Software*, 2022. To appear.

T. Wong, M. Wagner, and **C. Treude**. Self-Adaptive Systems: A Systematic Literature Review Across Categories and Domains. In *Information and Software Technology*, 2022. To appear.

A. Galappaththi, S. Nadi, and **C. Treude**. Does This Apply to Me? An Empirical Study of Technical Context in Stack Overflow. In *MSR '22: Proceedings of the 19th International Conference on Mining Software Repositories*, 2022. To appear. **(Acceptance rate: 34%)**

R. Garcia, C.-J. T. Liao, A. Pearce, and **C. Treude**. Gender Influence on Communication Initiated within Student Teams. In *SIGCSE '22: Proceedings of the 53rd Technical Symposium on Computer Science Education*, 2022. To appear.

M. Fernandes, S. Ferino, A. K. Fernandes, U. Kulesza, E. Aranha, and **C. Treude**. DevOps Education: An Interview Study of Challenges and Recommendations. In *ICSE '22: Proceedings of the 44th International Conference on Software Engineering – SEET track*, 2022. To appear.

**C. Treude**. Taming Multi-Output Recommenders for Software Engineering. In *ASE '22: Proceedings of the 37th International Conference on Automated Software Engineering*, 2022. To appear.

R. Kula and **C. Treude**. In War and Peace: The Impact of World Politics on Software Ecosystems. In *ESEC/FSE '22: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering – Ideas, Visions, and Reflections track*, 2022. To appear. **(Acceptance rate: 25%)**

F. Tian and **C. Treude**. Adding Context to Source Code Representations for Deep Learning. In *ICSME '22: Proceedings of the 38th International Conference on Software Maintenance and Evolution - NIER track*, 2022. To appear.

J. Caddy, M. Wagner, **C. Treude**, E. Barr, M. Allamanis. Is Surprisal in Issue Trackers Actionable? In *MSR '22: Proceedings of the 19th International Conference on Mining Software Repositories – RR track*, 2022. To appear.

B. Reid, M. Wagner, M. d'Amorim, and **C. Treude**. Software Engineering User Study Recruitment on Prolific: An Experience Report. In *RoPES '22: Proceedings of the 1st International Workshop on Recruiting Participants for Empirical Software Engineering*, 2022. To appear.

F. Ebert, A. Serebrenik, **C. Treude**, N. Novielli, and F. Castor. On Recruiting Experienced GitHub Contributors for Interviews and Surveys on Prolific. In *RoPES '22: Proceedings of the 1st International Workshop on Recruiting Participants for Empirical Software Engineering*, 2022. To appear.

## 2021

M. Aniche, **C. Treude**, and A. Zaidman. How Developers Engineer Test Cases: An Observational Study. In *IEEE Transactions on Software Engineering*, 2021. To appear.

M. Liu, X. Peng, A. Marcus, S. Xing, **C. Treude**, and C. Zhao. API-Related Developer Information Needs in Stack Overflow. In *IEEE Transactions on Software Engineering*, 2021. To appear.

K. Cao, C. Chen, S. Baltes, **C. Treude**, and X. Chen. Automated Query Reformulation for Efficient Search Based on Query Logs from Stack Overflow. In *ICSE '21: Proceedings of the 43rd International Conference on Software Engineering*, 2021. To appear.

**(ACM SIGSOFT Distinguished Paper)**

H. Hata, R. Kula, T. Ishio, and **C. Treude**. Same File, Different Changes: The Potential of Meta-Maintenance on GitHub. In *ICSE '21: Proceedings of the 43rd International Conference on Software Engineering*, 2021. To appear.

M. Gerosa, I. Wiese, B. Trinkenreich, G. Link, G. Robles, **C. Treude**, I. Steinmacher, and A. Sarma. The Shifting Sands of Motivation: Revisiting What Drives Contributors in Open Source. In *ICSE '21: Proceedings of the 43rd International Conference on Software Engineering*, 2021. To appear.

M. Liu, X. Peng, A. Marcus, **C. Treude**, X. Bai, G. Lyu, J. Xie, and X. Zhang. Learning-based Extraction of First-Order Logic Representations of API Directives. In *ESEC/FSE '21: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2021. To appear.

**(Acceptance rate: 24%)**

J. Liu, S. Baltes, **C. Treude**, D. Lo, Y. Zhang, and X. Xia. Characterizing Search Activities on Stack Overflow. In *ESEC/FSE '21: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2021. To appear.

**(Acceptance rate: 24%)**

H. Hata, N. Novielli, S. Baltes, R. Kula, and **C. Treude**. GitHub Discussions: An Exploratory Study of Early Adoption. In *Empirical Software Engineering*, 2021. To appear.

R. Croft, Y. Xie, M. Zahedi, M. A. Babar, and **C. Treude**. An Empirical Study of Developers' Discussions about Security Challenges of Different Programming Languages. In *Empirical Software Engineering*, 2021. To appear.

S. Herbold, A. Trautsch, B. Ledel, A. Aghamohammadi, T. A. Ghaleb, K. Kaur Chahal, T. Bossenmaier, B. Nagaria, P. Makedonski, M. N. Ahmadabadi, K. Szabados, H. Spieker, M. Madeja, N. G. Hoy, V. Lenarduzzi, S. Wang, G. Rodríguez-Pérez, R. Colomo-Palacios, R. Verdecchia, P. Singh, Y. Qin, D. Chakroborti, W. Davis, V. Walunj, H. Wu, D. Marcilio, O. Alam, A. Aldaej, I. Amit, B. Turhan, S. Eismann, A. Wickert, I. Malavolta, M. Sulír, F. Fard, A. Z. Henley, S. Kourtzanidis, E. Tüzün, **C. Treude**, S. M. Shamasbi, I. Pashchenko, M. Wyrich, J. C. Davis, A. Serebrenik, E. Albrecht, E. U. Aktas, D. Strüber, and J. Erbel. A Fine-grained Data Set and Analysis of Tangling in Bug Fixing Commits. In *Empirical Software Engineering*, 2021. To appear.

T. Kinsman, M. Wessel, M. Gerosa, and **C. Treude**. How Do Software Developers Use GitHub Actions to Automate Their Workflows? In *MSR '21: Proceedings of the 18th International Conference on Mining Software Repositories*, 2021. To appear.

**(Acceptance rate: 34%)**

M. Alghamdi, S. Hayashi, T. Kobayashi, and **C. Treude**. Characterising the Knowledge about Primitive Variables in Java Code Comments. In *MSR '21: Proceedings of the 18th International Conference on Mining Software Repositories*, 2021. To appear.

**(Acceptance rate: 34%)**

J. M. Florez, O. Chaparro, **C. Treude**, and A. Marcus. Combining Query Reduction and Expansion for Text-Retrieval-Based Bug Localization. In *SANER '21: Proceedings of the 28th International Conference on Software Analysis, Evolution, and Reengineering*, 2021. To appear.

S. Wattanakriengkrai, B. Chinthanet, H. Hata, R. Kula, **C. Treude**, J. Guo, and K. Matsumoto. GitHub Repositories with Links to Academic Papers: Public Access, Traceability, and Evolution. In *Journal of Systems and Software*, 2021. To appear.

L. Furtado, B. Cartaxo, **C. Treude**, and G. Pinto. How Successful Are Open Source Contributions From Countries with Different Levels of Human Development? In *IEEE Software*, 2021. To appear.

R. Kula, **C. Treude**, H. Hata, S. Baltes, I. Steinmacher, M. A. Gerosa, and W. Kula Amini. Challenges for Inclusion in Software Engineering: The Case of the Emerging Papua New Guinean Society. In *IEEE Software*, 2021. To appear.

R. Rebouças de Almeida, R. do Nascimento Ribeiro, **C. Treude**, and U. Kulesza. Business-Driven Technical Debt Prioritization: An Industrial Case Study. In *TechDebt '21: Proceedings of the 4th International Conference on Technical Debt*, 2021. To appear.  
**(Best Paper)**

S. Islam, R. Kula, **C. Treude**, T. Ishio, and K. Matsumoto. Contrasting Third-Party Package Management User Experience. In *ICSME '21: Proceedings of the 37th International Conference on Software Maintenance and Evolution - NIER track*, 2021. To appear.

S. Ferino, M. Fernandes, A. K. Fernandes, U. Kulesza, E. Aranha, and **C. Treude**. Analyzing DevOps Teaching Strategies: An Initial Study. In *SBES '21: Proceedings of the 35th Brazilian Symposium on Software Engineering - IIER track*, 2021. To appear.  
**(Distinguished Paper)**

S. A. Licorish, **C. Treude**, J. Grundy, K. Blincoe, S. MacDonell, C. Tantithamthavorn, L. Li, and J.-G. Schneider. Software Engineering in Australasia. In *SIGSOFT Software Engineering Notes* 46, 2, pages 16-17, 2021.

## 2020

S. Baltes, **C. Treude**, and M. P. Robillard. Contextual Documentation Referencing on Stack Overflow. In *IEEE Transactions on Software Engineering*, 2020. To appear.

P.-P. Pârțachi, S. Dash, **C. Treude**, and E. T. Barr. Posit: Simultaneously Tagging Natural and Programming Languages. In *ICSE '20: Proceedings of the 42nd International Conference on Software Engineering*, 2020. To appear.

W. Xie, X. Peng, M. Liu, **C. Treude**, Z. Xing, X. Zhang, and W. Zhao. API Method Recommendation via Explicit Matching of Functionality Verb Phrases. In *ESEC/FSE '20: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2020. To appear.  
**(Acceptance rate: 28%)**

J. Silva, I. Wiese, D. M. German, **C. Treude**, M. A. Gerosa, and I. Steinmacher. A Theory of the Engagement in Open Source Projects via Summer of Code Programs. In *ESEC/FSE '20: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2020. To appear.  
**(Acceptance rate: 28%)**

E. L. Vargas, M. Aniche, **C. Treude**, M. Bruntink, and G. Gousios. Selecting third-party libraries: The practitioners' perspective. In *ESEC/FSE '20: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering*, 2020. To appear.  
**(Acceptance rate: 28%)**

Y. Liu, M. Liu, X. Peng, **C. Treude**, Z. Xing, and X. Zhang. Generating Concept based API Element Comparison Using a Knowledge Graph. In *ASE '20: Proceedings of the 35th International Conference on Automated Software Engineering*, 2020. To appear.

**(Acceptance rate 22%)**

M. P. Robillard and **C. Treude**. Understanding Wikipedia as a Resource for Opportunistic Learning of Computing Concepts. In *SIGCSE '20: Proceedings of the 51st Technical Symposium on Computer Science Education*, 2020. To appear.

J. Jiarpakdee, C. Tantithamthavorn, and **C. Treude**. The Impact of Automated Feature Selection Techniques on the Interpretation of Defect Models. In *Empirical Software Engineering*, 2020. To appear.

R. Maipradit, **C. Treude**, H. Hata, and K. Matsumoto. Wait For It: Identifying “On-Hold” Self-Admitted Technical Debt. In *Empirical Software Engineering*, 2020. To appear.

G. Pinto, B. Miranda, S. Dissanayake, M. d’Amorim, **C. Treude**, and A. Bertolino. What is the Vocabulary of Flaky Tests? In *MSR '20: Proceedings of the 17th International Conference on Mining Software Repositories*, 2020. To appear.

M. Alghamdi, **C. Treude**, and M. Wagner. Human-Like Summaries from Heterogeneous and Time-Windowed Software Development Artefacts. In *PPSN '20: Proceedings of the 16th International Conference on Parallel Problem Solving from Nature*, 2020. To appear.

J. O. Silva, I. Wiese, D. M. German, **C. Treude**, M. A. Gerosa, and I. Steinmacher. Google Summer of Code: Student Motivations and Contributions. In *Journal of Systems and Software*, 2020. To appear.

S. Nadi and **C. Treude**. Essential Sentences for Navigating Stack Overflow Answers. In *SANER '20: Proceedings of the 27th International Conference on Software Analysis, Evolution, and Reengineering*, 2020. To appear.

**C. Treude**, J. Middleton, and T. Atapattu. Beyond Accuracy: Assessing Software Documentation Quality. In *ESEC/FSE '20: Proceedings of the Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Visions and Reflections*, 2020. To appear.

**(Acceptance rate: 38%)**

S. Baltes and **C. Treude**. Code Duplication on Stack Overflow. In *ICSE '20: Proceedings of the 42nd International Conference on Software Engineering, NIER track*, 2020. To appear.

**(Acceptance rate 30%)**

I. Nunes, **C. Treude**, and F. Calefato. The Impact of Dynamics of Collaborative Software Engineering on Introverts: A Study Protocol. In *MSR '20: Proceedings of the 17th International Conference on Mining Software Repositories*, 2020. To appear.

L. F. Dias, C. Barbosa, G. Pinto, I. Steinmacher, B. Fonseca, M. Ribeiro, **C. Treude**, and D. A. da Costa. Refactoring from 9 to 5? What and When Employees and Volunteers Contribute to OSS. In *VL/HCC '20: Proceedings of the Symposium on Visual Languages and Human-Centric Computing*, 2020. To appear.

B. Reid, **C. Treude**, and M. Wagner. Optimising the Fit of Stack Overflow Code Snippets into Existing Code. In *GI@GECCO '20: Proceedings of the 9th International Workshop on Genetic Improvement*, 2020. To appear.

M. Herath, T. Atapattu, H. A. Dung, **C. Treude**, and K. Falkner. AdelaideCyC at SemEval-2020 Task 12: Ensemble of Classifiers for Offensive Language Detection in Social Media. In *SemEval@COLING '20: Proceedings of the 14th International Workshop on Semantic Evaluation*, 2020. To appear.

2019

H. Hata, C. Treude, R. G. Kula, and T. Ishio. 9.6 Million Links in Source Code Comments: Purpose, Evolution, and Decay. In *ICSE '19: Proceedings of the 41st International Conference on Software Engineering*, 2019. To appear.

**(Acceptance rate 21%)**

E. Thiselton and C. Treude. Enhancing Python Compiler Error Messages via Stack Overflow. In *ESEM '19: 12th International Symposium on Empirical Software Engineering and Measurement*, 2019. To appear.

**(Best paper; acceptance rate 20%)**

Z. Liu, X. Xia, C. Treude, D. Lo, and S. Li. Automatic Generation of Pull Request Descriptions. In *ASE '19: Proceedings of the 34th International Conference on Automated Software Engineering*, 2019. To appear.

**(ACM SIGSOFT Distinguished Paper; acceptance rate 23%)**

A. Sulistya, G. A. A. Prana, A. Sharma, D. Lo, and C. Treude. SIEVE: Helping Developers Sift Wheat from Chaff via Cross-Platform Analysis. In *Empirical Software Engineering*, 2019. To appear.

C. S. Yu, C. Treude, and M. Aniche. Comprehending Test Code: An Empirical Study. In *ICSME '19: Proceedings of the 35th International Conference on Software Maintenance and Evolution*, 2019. To appear.

**(Acceptance rate 23%)**

C. Treude and M. Wagner. Predicting Good Configurations for GitHub and Stack Overflow Topic Models. In *MSR '19: Proceedings of the 16th International Conference on Mining Software Repositories*, 2019. To appear.

**(Acceptance rate 25%)**

A. Alqaimi, P. Thongtanunam, and C. Treude. Automatically Generating Documentation for Lambda Expressions in Java. In *MSR '19: Proceedings of the 16th International Conference on Mining Software Repositories*, 2019. To appear.

**(Acceptance rate 25%)**

H. Melo, R. Coelho, and C. Treude. Unveiling Exception Handling Guidelines adopted by Java Developers. In *SANER '19: Proceedings of the 26th International Conference on Software Analysis, Evolution, and Reengineering*, 2019. To appear.

**(Acceptance rate 27%)**

I. S. Wiese, R. T. Kuroda, I. Steinmacher, G. A. Oliva, R. Ré, C. Treude, and M. A. Gerosa. Are Pieces of Contextual Information Suitable for Predicting Co-Changes? An Empirical Study. In *Software Quality Journal*, 2019. To appear.

M. Kelly, C. Treude, and A. Murray. A Case Study on Automated Fuzz Target Generation for Large Codebases. In *ESEM '19: 12th International Symposium on Empirical Software Engineering and Measurement*, 2019. To appear.

**(Acceptance rate 35%)**

R. Rebouças de Almeida, C. Treude, and U. Kulesza. Tracy: A Business-driven Technical Debt Prioritization Framework. In *ICSME '19: Proceedings of the 35th International Conference on Software Maintenance and Evolution*, 2019. To appear.

**(Acceptance rate 56%)**

M. Nassif, C. Treude, and M. P. Robillard. Witt: Querying Technology Terms based on Automated Classification. In *ICSE '19: Proceedings of the 41st International Conference on Software Engineering*, 2019. To appear.

**(Acceptance rate 47%)**

S. Baltes, **C. Treude**, and S. Diehl. SOTorrent: Studying the Origin, Evolution, and Usage of Stack Overflow Code Snippets. In *MSR' 19: Proceedings of the 16th International Conference on Mining Software Repositories*, 2019. To appear.

**(Acceptance rate 33%)**

M. Galster, **C. Treude**, and K. Blincoe. Supporting Software Architecture Maintenance by Providing Task-specific Recommendations. In *ICSME '19: Proceedings of the 35th International Conference on Software Maintenance and Evolution*, 2019. To appear.

M. Alghamdi, **C. Treude**, and M. Wagner. Toward Human-Like Summaries Generated from Heterogeneous Software Artefacts. In *GI@GECCO '19: Proceedings of the 7th International Workshop on Genetic Improvement*, 2019. To appear.

**C. Treude** and F. Figueira Filho. How Team Awareness Influences Perceptions of Developer Productivity. In *Rethinking Productivity in Software Engineering*, C. Sadowski and T. Zimmermann, Eds., 2019. To appear.

M.-A. Storey and **C. Treude**. Software Engineering Dashboards: Types, Risks, and Future. In *Rethinking Productivity in Software Engineering*, C. Sadowski and T. Zimmermann, Eds., 2019. To appear.

## 2018

M. Nassif, **C. Treude**, and M. P. Robillard. Automatically Categorizing Software Technologies. In *IEEE Transactions on Software Engineering*, 2018. To appear.

G. A. A. Prana, **C. Treude**, F. Thung, T. Atapattu, and D. Lo. Categorizing the Content of GitHub README Files. In *Empirical Software Engineering*, 2018. To appear.

D. A. da Costa, S. McIntosh, **C. Treude**, U. Kulesza, and A. E. Hassan. The Impact of Rapid Release Cycles on the Integration Delay of Fixed Issues. In *Empirical Software Engineering* 23, 2 (April 2018), pages 835-904, 2018.

**C. Treude**, L. Leite, and M. Aniche. Unusual Events in GitHub Repositories. In *Journal of Systems and Software*, 142 (August 2018), pages 237-247, 2018.

M. Aniche, **C. Treude**, I. Steinmacher, I. Wiese, G. H. L. Pinto, M.-A. Storey, and M. A. Gerosa. How Modern News Aggregators Help Development Communities Shape and Share Knowledge. In *ICSE '18: Proceedings of the 40th International Conference on Software Engineering*, 2018. To appear.

**(Acceptance rate 21%)**

J. Jiarpakdee, C. Tantithamthavorn, and **C. Treude**. AutoSpearman: Automatically Mitigating Correlated Software Metrics for Interpreting Defect Models. In *ICSME '18: Proceedings of the 34th International Conference on Software Maintenance and Evolution*, 2018. To appear.

**(Acceptance rate 26%)**

S. Baltes, L. Dumani, **C. Treude**, and S. Diehl. SOTorrent: Reconstructing and Analyzing the Evolution of Stack Overflow Posts. In *MSR '18: Proceedings of the 15th International Conference on Mining Software Repositories*, 2018. To appear.

**(Acceptance rate 33%)**

R. Rebouças de Almeida, U. Kulesza, **C. Treude**, A. Lima, and D. C. Feitosa. Aligning Technical Debt Prioritization with Business Objectives: A Multiple-case Study. In *ICSME '18: Proceedings of the 34th International Conference on Software Maintenance and Evolution, Industry track*, 2018. To appear.

**(Acceptance rate 47%)**

I. Steinmacher, **C. Treude**, and M. A. Gerosa. Let me in: Guidelines for the Successful Onboarding of Newcomers to Open Source Projects. In *IEEE Software*, 2018. To appear.

M. Zahedi, M. Ali Babar, and **C. Treude**. An Empirical Study of Security Issues Posted in Open Source Projects. In *HICSS '18: Proceedings of the 51st Hawaii International Conference on System Sciences*, pages 5504-5513, 2018.

**(Nominated for Best Paper)**

**C. Treude** and M. Aniche. Where does Google find API documentation? In *WAPI' 18: Proceedings of the 2nd International Workshop on API Usage and Evolution*, 2018. To appear.

## 2017

M. Aniche, G. Bavota, **C. Treude**, M. A. Gerosa, and A. van Deursen. Code Smells for Model-View-Controller Architectures. In *Empirical Software Engineering*, 2017. To appear.

R. Coelho, L. Almeida, G. Gousios, A. van Deursen, and **C. Treude**. Exception Handling Bug Hazards in Android: Results from a Mining Study and an Exploratory Survey. In *Empirical Software Engineering* 22, 3, pages 1264-1304, 2017.

I. S. Wiese, R. Ré, I. Steinmacher, R. T. Kuroda, G. Oliva, **C. Treude**, and M. A. Gerosa. Using contextual information to predict co-changes. In *Journal of Systems and Software* 128 (June 2017), pages 220-235, 2017.

F. N. A. Al Omran and **C. Treude**. Choosing an NLP Library for Analyzing Software Documentation: A Systematic Literature Review and a Series of Experiments. In *MSR '17: Proceedings of the 14th International Conference on Mining Software Repositories*, pages 187-197, 2017.

**(Acceptance rate 31%)**

**C. Treude** and M. P. Robillard. Understanding Stack Overflow Code Fragments. In *ICSME '17: Proceedings of the 33rd International Conference on Software Maintenance and Evolution*, pages 509-513, 2017.

**(Acceptance rate 58%)**

M. P. Robillard, A. Marcus, **C. Treude**, G. Bavota, O. Chaparro, N. Ernst, M. A. Gerosa, M. Godfrey, M. Lanza, M. Linares-Vásquez, G. Murphy, L. Moreno, D. Shepherd, and E. Wong. On-Demand Developer Documentation. In *ICSME '17: Proceedings of the 33rd International Conference on Software Maintenance and Evolution*, pages 479-483, 2017.

**(Acceptance rate 58%)**

B. A. Campbell and **C. Treude**. NLP2Code: Code Snippet Content Assist via Natural Language Tasks. In *ICSME '17: Proceedings of the 33rd International Conference on Software Maintenance and Evolution*, pages 628-632, 2017.

**(Acceptance rate 50%)**

F. Steffens, S. Marczak, F. Figueira Filho, **C. Treude**, and C. de Souza. A Preliminary Evaluation of a Gamification Framework to Jump Start Collaboration Behavior Change. In *CHASE '17: Proceedings of the 10th International Workshop on Cooperative and Human Aspects of Software Engineering*, pages 90-91, 2017.

L. Silva, F. Pinto, U. Kulesza, and C. Treude. PerfMiner Visualizer: uma ferramenta para análise da evolução do atributo de qualidade de desempenho em sistemas de software. In *SBES '17: Proceedings of the 31st Brazilian Symposium on Software Engineering*, 2017. To appear.



## 2016

C. Treude and M. P. Robillard. Augmenting API Documentation with Insights from Stack Overflow. In *ICSE '16: Proceedings of the 38th International Conference on Software Engineering*, pages 392-403, 2016. (Acceptance rate 19%)

I. Steinmacher, T. U. Conte, C. Treude, and M. A. Gerosa. Overcoming Open Source Project Entry Barriers with a Portal for Newcomers. In *ICSE '16: Proceedings of the 38th International Conference on Software Engineering*, pages 273-284, 2016. (Acceptance rate 19%)

C. de Souza, F. Figueira Filho, M. Miranda, R. Ferreira, C. Treude, and L. Singer. The Social Side of Software Platform Ecosystems. In *CHI '16: Proceedings of the 34th Annual ACM Conference on Human Factors in Computing Systems*, 2016, pages 3204-3214. (Acceptance rate 23%)

M. Aniche, G. Bavota, C. Treude, A. van Deursen, and M. A. Gerosa. A Validated Set of Smells in Model-View-Controller Architectures. In *ICSME '16: Proceedings of the 32nd International Conference on Software Maintenance and Evolution*, pages 233-243, 2016. (Acceptance rate 29%)

I. S. Wiese, I. Steinmacher, C. Treude, J. T. Da Silva, and M. A. Gerosa. Who is who in the mailing list? Comparing six disambiguation heuristics to identify multiple addresses of a participant. In *ICSME '16: Proceedings of the 32nd International Conference on Software Maintenance and Evolution*, pages 345-355, 2016. (Acceptance rate 29%)

M. Aniche, C. Treude, A. Zaidman, A. van Deursen, and M. A. Gerosa. SATT: Tailoring Code Metric Thresholds for Different Software Architectures. In *SCAM '16: Proceedings of the 16th International Working Conference on Source Code Analysis and Manipulation*, pages 41-50, 2016. (Acceptance rate 38%)

M. Aniche, M. A. Gerosa, and C. Treude. Developers' Perceptions on Object-Oriented Design and Architectural Roles. In *SBES '16: Proceedings of the 30th Brazilian Symposium on Software Engineering*, pages 63-72, 2016.

## 2015

C. Treude, M. P. Robillard, and B. Dagenais. Extracting Development Tasks to Navigate Software Documentation. In *IEEE Transactions on Software Engineering* 41, 6 (June 2015), pages 565-581, 2015.

C. Treude, F. Figueira Filho, and U. Kulesza. Summarizing and Measuring Development Activity. In *ESEC/FSE '15: Proceedings of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, pages 625-636, 2015. (Acceptance rate 25%)

F. Figueira Filho, M. G. Perin, C. Treude, S. Marczak, L. Melo, I. Marques da Silva, and L. Bibiano dos Santos. A study on the geographical distribution of Brazil's prestigious software developers. In *Journal of Internet Services and Applications* 6, 17 (June 2015), pages 1-12, 2015.

F. Pinto, U. Kulesza, and C. Treude. Automating the Performance Deviation Analysis for Multiple System Releases: an Evolutionary Study. In *SCAM '15: Proceedings of the 15th International Working Conference on Source Code Analysis and Manipulation*, pages 201-210, 2015. (Acceptance rate 35%)

R. Ferreira, M. Miranda, F. Figueira Filho, C. de Souza, **C. Treude**, and L. Singer. Os Aspectos Sociais dos Ecossistemas de Software. In *SBSC '15: Proceedings of the Brazilian Symposium in Collaborative Systems*, pages 9-16, 2015.

**(Best Paper)**

F. Steffens, S. Marczak, F. Figueira Filho, **C. Treude**, L. Singer, D. Redmiles, and B. Al-Ani. Using Gamification as a Collaboration Motivator for Software Development Teams: A Preliminary Framework. In *SBSC '15: Proceedings of the Brazilian Symposium in Collaborative Systems*, pages 48-55, 2015.

J. Lima, **C. Treude**, F. Figueira Filho, and U. Kulesza. Assessing Developer Contribution with Repository Mining-based Metrics. In *ICSME '15: Proceedings of the 31st International Conference on Software Maintenance and Evolution*, pages 536-540, 2015.

**(Acceptance rate 35%)**

L. Leite, **C. Treude**, and F. Figueira Filho. UEDashboard: Awareness of Unusual Events in Commit Histories. In *ESEC/FSE '15: Proceedings of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, pages 978-981, 2015.

**C. Treude**, C. Prolo, and F. Figueira Filho. Challenges in Analyzing Software Documentation in Portuguese. In *SBES '15: Proceedings of the 29th Brazilian Symposium on Software Engineering*, pages 179-184, 2015.

**C. Treude**, M. Sicard, M. Klocke, and M. P. Robillard. TaskNav: Task-based Navigation of Software Documentation. In *ICSE '15: Proceedings of the 37th International Conference on Software Engineering*, pages 649-652, 2015.

**(Acceptance rate 60%)**

S. Marczak, F. Figueira Filho, L. Singer, **C. Treude**, F. Steffens, D. Redmiles, and B. Al-Ani. Studying Gamification as a Collaboration Motivator for Virtual Software Teams: Social Issues, Cultural Issues, and Research Methods. In *Proceedings of the CSCW 2015 workshop on Doing CSCW Research in Latin America: Differences, Opportunities, Challenges, and Lessons Learned*, 2015.

L. Leite, **C. Treude**, and F. Figueira Filho. An Automatic Approach to Detect Unusual Events in Software Repositories. In *ELA-ES '15: Proceedings of the 2nd Latin-American School on Software Engineering*, 2015.

## 2013

L. Singer, F. Figueira Filho, B. Cleary, **C. Treude**, M.-A. Storey, and K. Schneider. Mutual Assessment in the Social Programmer Ecosystem: An Empirical Investigation of Developer Profile Aggregators. In *CSCW '13: Proceedings of the Conference on Computer Supported Cooperative Work*, pages 103-116, 2013.

**(Acceptance rate 36%; nominated for Best Paper)**

C. Parnin, **C. Treude**, and M.-A. Storey. Blogging Developer Knowledge: Motivations, Challenges and Future Directions. In *ICPC '13: Proceedings of the 21st International Conference on Program Comprehension*, pages 211-214, 2013.

**(Acceptance rate 36%; Most Promising Idea Award)**

B. Cleary, M.-A. Storey, C. Gomez, L. Singer, and **C. Treude**. Analyzing the Friendliness of Exchanges in an Online Software Developer Community. In *CHASE '13: Proceedings of 6th International Workshop on Cooperative and Human Aspects of Software Engineering*, pages 159-160, 2013.

B. Cleary, **C. Treude**, F. Figueira Filho, M.-A. Storey, and M. Salois. Improving Tool Support for Software Reverse Engineering in a Security Context. In *Foundations of Augmented Cognition, Lecture Notes in Computer Science, D. D. Schmorrow and C. M. Fidopiastis, Eds.*, pages 113-122, 2013.

O. Barzilay, **C. Treude**, and A. Zagalsky. Facilitating Crowd Sourced Software Engineering via Stack Overflow. In *Finding Source Code on the Web for Remix and Reuse*, S. E. Sim and R. Gallardo-Valencia, Eds., pages 289-308, 2013.

## 2012

**C. Treude** and M.-A. Storey. Work Item Tagging: Communicating Concerns in Collaborative Software Development. In *IEEE Transactions on Software Engineering* 38, 1 (January/February 2012), pages 19-34, 2012.

**(Special Section on Selected Papers from ICSE '09)**

**C. Treude**, P. Gorman, L. Grammel, and M.-A. Storey. WorkItemExplorer: Visualizing Software Development Tasks Using an Interactive Exploration Environment. In *ICSE '12: Proceedings of the 34th International Conference on Software Engineering*, pages 1399-1402, 2012.

**(Acceptance rate 31%)**

**C. Treude**, F. Figueira Filho, B. Cleary, and M.-A. Storey. Programming in a Socially Networked World: the Evolution of the Social Programmer. In *FutureCSD '12: Proceedings of the CSCW Workshop on the Future of Collaborative Software Development*, 2012.

**C. Treude**. The Role of Social Media Artifacts in Collaborative Software Development. *PhD thesis, University of Victoria*, 2012.

C. Parnin, **C. Treude**, L. Grammel, and M.-A. Storey. Crowd Documentation: Exploring the Coverage and the Dynamics of API Discussions on Stack Overflow. *Georgia Tech Technical Report GIT-CS-12-05, Georgia Institute of Technology*, 2012.

## 2011

**C. Treude** and M.-A. Storey. Effective Communication of Software Development Knowledge Through Community Portals. In *ESEC/FSE '11: Proceedings of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, pages 91-101, 2011.

**(Acceptance rate 17%)**

**C. Treude**, F. Figueira Filho, M.-A. Storey, and M. Salois. An Exploratory Study of Software Reverse Engineering in a Security Context. In *WCRE '11: Proceedings of the 18th Working Conference on Reverse Engineering*, pages 184-188, 2011.

**(Acceptance rate 48%)**

**C. Treude**, O. Barzilay, and M.-A. Storey. How do Programmers Ask and Answer Questions on the Web? (NIER Track). In *ICSE '11: Proceedings of the 33rd ACM/IEEE International Conference on Software Engineering*, pages 804-807, 2011.

**(Acceptance rate 23%)**

C. Parnin and **C. Treude**. Measuring API Documentation on the Web. In *Web2SE '11: Proceedings of the 2nd International Workshop on Web 2.0 For Software Engineering*, pages 25-30, 2011.

**C. Treude**, M.-A. Storey, A. van Deursen, A. Begel, and S. Black. Second International Workshop on Web 2.0 for Software Engineering (Web2SE 2011). In *ICSE '11: Proceedings of the 33rd ACM/IEEE International Conference on Software Engineering*, pages 1222-1223, 2011.

**C. Treude**, M.-A. Storey, A. van Deursen, A. Begel, and S. Black. Workshop Report from Web2SE 2011: 2nd International Workshop on Web 2.0 for Software Engineering. In *SIGSOFT Software Engineering Notes* 36, 5 (September 2011), pages 24-29, 2011.

## 2010

C. Treude and M.-A. Storey. Awareness 2.0: Staying Aware of Projects, Developers and Tasks using Dashboards and Feeds. In *ICSE '10: Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering – Volume 1*, pages 365-374, 2010.

**(Acceptance rate 14%)**

C. Treude and M.-A. Storey. Bridging Lightweight and Heavyweight Task Organization: The Role of Tags in Adopting New Task Categories. In *ICSE '10: Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering – Volume 2*, pages 231-234, 2010.

**(Acceptance rate 25%)**

G. Bougie, C. Treude, D. M. German, and M.-A. Storey. A Comparative Exploration of FreeBSD Bug Lifetimes. In *MSR '10: Proceedings of the 2010 International Working Conference on Mining Software Repositories*, pages 106-109, 2010.

M.-A. Storey, C. Treude, A. van Deursen, and L.-T. Cheng. The Impact of Social Media on Software Engineering Practices and Tools. In *FoSER '10: Proceedings of the FSE/SDP workshop on Future of software engineering research*, pages 359-364, 2010.

L. Grammel, H. Schackmann, A. Schröter, C. Treude and M.-A. Storey. Attracting the Community's Many Eyes: an Exploration of User Involvement in Issue Tracking. In *HAoSE' 10: Human Aspects of Software Engineering*, Article 3, 2010.

C. Treude and M.-A. Storey. The Implications of How We Tag Software Artifacts: Exploring Different Schemata and Metadata for Tags. In *Web2SE '10: Proceedings of the 1st Workshop on Web 2.0 For Software Engineering*, pages 12-13, 2010.

L. Grammel, C. Treude, and M.-A. Storey. Mashups Environments in Software Engineering. In *Web2SE '10: Proceedings of the 1st Workshop on Web 2.0 For Software Engineering*, pages 24-25, 2010.

M.-A. Storey, L. Grammel, and C. Treude. Smart Media: Bridging Interactions and Services for the Smart Internet. In *The Smart Internet, Lecture Notes in Computer Science*, M. Chignell, J. Cordy, J. Ng, and Y. Yesha, Eds., pages 152-169, 2010.

C. Treude. The Role of Emergent Knowledge Structures in Collaborative Software Development. In *ICSE '10: Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering – Volume 2*, pages 389-392, 2010.

C. Treude, M.-A. Storey, K. Ehrlich, and A. van Deursen. Web2SE: First Workshop on Web 2.0 for Software Engineering. In *ICSE '10: Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering – Volume 2*, pages 457-458, 2010.

C. Treude, M.-A. Storey, K. Ehrlich, and A. van Deursen. Workshop report from Web2SE: First workshop on Web 2.0 for Software Engineering. In *SIGSOFT Software Engineering Notes 35, 5 (October 2010)*, pages 45-50, 2010.

## 2009

C. Treude and M.-A. Storey. How tagging helps bridge the gap between social and technical aspects in software development. In *ICSE '09: Proceedings of the 2009 IEEE 31st International Conference on Software Engineering*, pages 12-22, 2009.

**(Acceptance rate 12%; invited to TSE Special Section on Selected Papers from ICSE '09)**

**C. Treude** and M.-A. Storey. ConcernLines: A timeline view of co-occurring concerns. In *ICSE '09: Proceedings of the 2009 IEEE 31st International Conference on Software Engineering*, pages 575-578, 2009.  
(Acceptance rate 33%)

L. Grammel, M.-A. Storey, and **C. Treude**. User interfaces for visual analysis and monitoring in business intelligence. In *CASCON '09: Proceedings of the 2009 Conference of the Center for Advanced Studies on Collaborative Research*, pages 323-324, 2009.

**C. Treude**, M.-A. Storey, and J. Weber. Empirical Studies on Collaboration in Software Development: A Systematic Literature Review. *Technical Report DCS-331-IR, Department of Computer Science, University of Victoria*, 2009.

2007

**C. Treude**, S. Berlik, S. Wenzel, and U. Kelter. Difference computation of large models. In *ESEC/FSE '07: Proceedings of the 6th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering*, pages 295-304, 2007.  
(Acceptance rate 17%)

**C. Treude**. Einsatz multidimensionaler Suchstrukturen zur Optimierung der Bestimmung von Dokumentdifferenzen. *Diplom thesis, Universität Siegen*, 2007.  
(in German)

## Presentations

### Keynote Addresses

How Do Social Media Artifacts Support Collaborative Software Development? Empirical Studies from the University of Victoria  
*September 5, 2011, 4th International Workshop on Social Software Engineering, Szeged, Hungary*

### Invited Talks

Repacking software artefacts to bridge the gap between documentation authors and readers  
*April 24, 2018, University of Canterbury, Christchurch, New Zealand*

Supporting developers in navigating software documentation  
*April 20, 2018, Victoria University of Wellington, Wellington, New Zealand*

Enabling better access to software documentation  
*April 19, 2018, University of Auckland, Auckland, New Zealand*

Unlocking the information hidden in software repositories with NLP and ML  
*February 2, 2018, Tokyo Institute of Technology, Tokyo, Japan*

Using NLP and ML to unlock information hidden in software repositories  
*February 2, 2018, Waseda University, Tokyo, Japan*

Bridging the gap between software documentation authors and consumers  
*January 29, 2018, Kyushu University, Fukuoka, Japan*

Unlocking information hidden in software repositories  
*January 17, 2018, Osaka University, Osaka, Japan*

- Enabling full access to the information in software repositories  
*December 18, 2017, Nara Institute of Science and Technology, Nara, Japan*
- Bimodal Software Documentation  
*October 31, 2017, The 55th CREST Open Workshop - Bimodal Program Analysis, London, United Kingdom*
- Unlocking the insights hidden in software documentation  
*October 18, 2017, Monash University, Melbourne, Australia*
- Using Natural Language Processing to Enhance Software Documentation  
*July 10, 2017, Harbin Institute of Technology, Harbin, China*
- Code Snippet Content Assist via Software Development Tasks  
*July 7, 2017, Harbin Institute of Technology, Harbin, China*
- Supporting Newcomers to Software Projects  
*July 6, 2017, Harbin Institute of Technology, Harbin, China*
- Building Tools to Improve Access to Software Documentation  
*June 19, 2017, Singapore Management University, Singapore*
- “Stop trying to do what you’re trying to do”: Developers’ Perceptions of Measuring Productivity  
*March 6, 2017, Dagstuhl Seminar on Rethinking Productivity in Software Engineering, Dagstuhl, Germany*
- Searching and summarizing software documentation  
*February 7, 2017, Northern Arizona University, Flagstaff, AZ, United States*
- Improving access to software documentation  
*January 18, 2017, Data61, Sydney, NSW, Australia*
- Finding and navigating software documentation  
*June 14, 2016, MapTek, Adelaide, SA, Australia*
- Making sense of software documentation with natural language processing  
*April 18, 2016, Hong Kong University of Science and Technology, Hong Kong, China*
- Using natural language processing to make sense of software documentation  
*April 4, 2016, Deakin University, Melbourne, Australia*
- Using NLP to identify meaningful sentences in informal documentation  
*March 7, 2016, NII Shonan Meeting on Mining & Modeling Unstructured Data in Software – Challenges for the Future, Shonan, Japan*
- TaskNav: A Search Interface for Software Documentation Using Natural Language Processing  
*December 3, 2015, Fluminense Federal University, Niterói, RJ, Brazil*
- Searching Software Documentation with the Help of Natural Language Processing  
*November 12, 2015, Bluesoft, São Paulo, SP, Brazil*
- Source code and everything else: Enabling full access to software repositories  
*October 13, 2015, University of Adelaide, SA, Australia*
- Using Natural Language Processing to Extract Task Descriptions from Software Documentation  
*September 17, 2015, Concordia University, Montreal, QC, Canada*
- Supporting Software Developers by Automatically Extracting Development Task Descriptions  
*February 27, 2015, Universidade de São Paulo, SP, Brazil*

The Role of Social Media Artifacts in Collaborative Software Development  
*April 9, 2012, University of Massachusetts Amherst, MA, United States*

The Role of Social Media Artifacts in Collaborative Software Development  
*February 27, 2012, The College of William and Mary, Williamsburg, VA, United States*

The Role of Social Media Artifacts in Collaborative Software Development  
*February 25, 2012, Rochester Institute of Technology, Rochester, NY, United States*

Awareness 2.0: Staying Aware of Projects, Developers and Tasks using Dashboards and Feeds  
*September 1, 2010, IBM Research, Hawthorne, NY, United States*

Lightweight Collaboration: Tags, Dashboards and Feeds in IBM's Jazz  
*March 22, 2010, University of California, Irvine, CA, United States*

Dashboards in IBM's Jazz: Business Intelligence for Software Development  
*November 4, 2009, IBM CASCON Workshop on User Interfaces for Visual Analysis and Monitoring in Business Intelligence, Toronto, ON, Canada*

Lightweight Collaboration: Tags, Dashboards & Feeds in Jazz  
*August 20, 2009, McGill University, Montreal, QC, Canada*

How Tagging Supports Informal Processes in Software Development  
*Aug 3, 2009, Department of National Defense, Valcartier, QC, Canada*

Tags for Work Items and Dashboards in IBM's Jazz  
*July 3, 2009, IBM Cognos, Ottawa, ON, Canada*

How Tagging Supports Informal Processes in Software Development  
*June 25, 2009, IBM Research, Hawthorne, NY, United States*

How Tagging Supports Informal Processes in Software Development  
*June 22, 2009, IBM Research, Cambridge, MA, United States*

### *Presentations at Seminars and Meetings*

How We Do Research: the Graduate Students' View  
*November 17, 2011, Graduate Student Seminar, University of Victoria, BC, Canada*

Work Item Explorer: Exploring Jazz work items using an interactive visualization  
 (with Patrick Gorman, Bradley Blashko, Lars Grammel, and Margaret-Anne Storey)  
*October 31, 2010, Consortium for Software Engineering Research (CSER) Fall Meeting, Toronto, ON, Canada*

Awareness 2.0: Staying Aware of Projects, Developers and Tasks using Dashboards and Feeds in Jazz  
*June 29, 2010, IBM CAS Seminar, IBM Ottawa, ON, Canada*

Lightweight Collaboration: Tags, Dashboards & Feeds in Jazz  
*October 28, 2009, IBM CAS Seminar, IBM Ottawa, ON, Canada*

Tagging in Jazz & the Visibility of Collaboration in Software Development  
*June 4, 2009, IBM CAS Seminar, IBM Ottawa, ON, Canada*

Team Work in Software Evolution: A Systematic Literature Review  
*April 27, 2009, Consortium for Software Engineering Research (CSER) Spring Meeting, Montreal, QC, Canada*

How Tagging helps bridge the Gap between Social and Technical Aspects in Software Development  
*March 27, 2009, Software Engineering Colloquium, University of Victoria, BC, Canada*

Research on collaborative software development using IBM's Jazz  
*October 26, 2008, Consortium for Software Engineering Research (CSER) Fall Meeting, Toronto, ON, Canada*

Collaboration through Artifacts  
*June 12, 2008, IBM CAS Seminar, IBM Ottawa, ON, Canada*

Difference Computation of Large Models  
*November 23, 2007, Software Engineering Colloquium, University of Victoria, BC, Canada*

Difference Computation of Large Models  
*October 4, 2007, IBM CAS Seminar, IBM Ottawa, ON, Canada*

### *Posters and Exhibits*

Visualizing software development tasks using multiple coordinated views  
(with Patrick Gorman, Lars Grammel, and Margaret-Anne Storey)  
*November 7-10, 2011, IBM CASCON 2011, Toronto, ON, Canada*

Work Item Explorer: Exploring Jazz work items using an interactive visualization  
(with Patrick Gorman, Bradley Blashko, Lars Grammel, and Margaret-Anne Storey)  
*November 1-4, 2010, IBM CASCON 2010, Toronto, ON, Canada*

Dashboards in IBM's Jazz: Business Intelligence for Software Development  
*November 2-5, 2009, IBM CASCON 2009, Toronto, ON, Canada*

Dashboards in IBM's Jazz: Business Intelligence for Software Development  
*November 1, 2009, Consortium for Software Engineering Research (CSER) Fall Meeting, Toronto, ON, Canada*

How Tagging Supports Informal Processes in Software Development  
*May 19, 2009, IBM Jazz Research Reception at the International Conference on Software Engineering (ICSE), Vancouver, BC, Canada*

Tag Clouds for Semi-Structured Documents (with Maria-Elena Hernandez and Sean Falconer)  
*October 27-30, 2008, IBM CASCON 2008, Toronto, ON, Canada*

How Tagging Supports Informal Processes in Software Development  
*October 26, 2008, Consortium for Software Engineering Research (CSER) Fall Meeting, Toronto, ON, Canada*

## Teaching

### *Lecturer*

**COMP SCI 3006NA / 7015NA:** Software Engineering & Project (*Undergraduate and graduate course, co-taught with Amali Weerasinghe*)  
*October 2017 – December 2017, Ngee Ann-Adelaide Education Centre, Singapore*

**COMP SCI 4404:** Software Engineering Research Project (*Honours course*)  
*July 2017 – October 2017, University of Adelaide, Australia*

**COMP SCI 7096B:** Master of Software Engineering Project Part B (*Masters course, co-taught with Marian Mihailescu*)  
*July 2017 – October 2017, University of Adelaide, Australia*



**COMP SCI 4809 / 7409:** Search Based Software Engineering (*Honours and Masters course, co-taught with Markus Wagner*)

July 2017 – October 2017, University of Adelaide, Australia

**COMP SCI 3006NA / 7015NA:** Software Engineering & Project (*Undergraduate and graduate course, co-taught with Claudia Szabo*)

April 2017 – June 2017, Ngee Ann-Adelaide Education Centre, Singapore

**COMP SCI 2205:** Software Engineering Workshop I (*Undergraduate course, co-taught with M. Ali Babar*)

February 2017 – June 2017, University of Adelaide, Australia

**COMP SCI 4405 / 7405:** Research Methods in Software Engineering and Computer Science (*Honours and Masters course, co-taught with Nick Falkner*)

February 2017 – June 2017, University of Adelaide, Australia

**COMP SCI 7096A:** Master of Software Engineering Project Part A (*Masters course*)

February 2017 – June 2017, University of Adelaide, Australia

**COMP SCI 4404:** Software Engineering Research Project (*Honours course*)

July 2016 – October 2016, University of Adelaide, Australia

**COMP SCI 2201 / 7201 SGDE:** Small Group Discovery Experience for Algorithm & Data Structure Analysis (*Undergraduate course, co-taught with M. Ali Babar*)

July 2016 – October 2016, University of Adelaide, Australia

**COMP SCI 7096B:** Master of Software Engineering Project Part B (*Masters course*)

July 2016 – October 2016, University of Adelaide, Australia

**COMP SCI 4405 / 7405:** Research Methods in Software Engineering and Computer Science (*Honours and Masters course, co-taught with Nick Falkner*)

February 2016 – June 2016, University of Adelaide, Australia

**COMP SCI 7036:** Software Engineering in Industry (*Masters course, co-taught with Michael Sheng*)

February 2016 – June 2016, University of Adelaide, Australia

**Mining Software Repositories** (*Undergraduate and graduate course, co-taught with Fernando Figueira Filho and Uirá Kulesza*)

February 2015 – June 2015, Universidade Federal do Rio Grande do Norte, Brazil

**Programmierpraktikum** (*programming course in Java, taught in German*)

April 2007 – July 2007, Universität Siegen, Germany

### Teaching Assistant

**SENG 435/CSC 485A/CSC 578A:** Computer-Supported Collaborative Work

September 2009 – December 2009, University of Victoria, Canada

**SENG 371:** Software Evolution

September 2008 – December 2008, University of Victoria, Canada

**CSC 105:** Computers and Information Processing

September 2007 – December 2007, University of Victoria, Canada

**Softwaretechnik I / Datenbanksysteme I** (*courses on Software Engineering and Database Systems, taught in German*)

October 2003 – March 2004, Universität Siegen, Germany

**Programmierpraktikum** (*programming course in Java, taught in German*)  
*April 2003 – September 2003 and April 2004 – March 2005, Universität Siegen, Germany*

### *Teaching Seminars Taken*

**EDCI 560: Teaching and Learning in Higher Education**  
*January 2009 – April 2009, University of Victoria, Canada*

### *Supervised Students*

#### **PhD**

**Jirayus Jiarpakdee**, Studying the Impact of Experimental Issues on the Interpretation of Defect Prediction Models, *co-supervised with Markus Wagner and Chakkrit Tantithamthavorn, started October 2017, University of Adelaide, Australia*

**Mahfouth Ahmad Alghamdi**, Summarising Software Engineering Data, *co-supervised with Markus Wagner, started October 2017, University of Adelaide, Australia*

**Bakheet Hamdan M Aljedaani**, A Knowledge-based Approach to the Development of Secure Software for IoT-based Healthcare, *co-supervised with M. Ali Babar, started September 2016, University of Adelaide, Australia*

#### **Master of Computer Science**

**Anwar Ibrahim Alqaimi**, Automatically generating documentation for lambda expressions in Java, *started February 2018, University of Adelaide, Australia*

**Abdulaziz Almoharib**, Developing a Bot for Frequently Asked Questions in a Slack channel, *February 2017 – October 2017, University of Adelaide, Australia*

**Fouad Nasser A Al Omran**, Supporting Newcomers to Software Projects through Natural Language Processing, *July 2016 – June 2017, University of Adelaide, Australia*

**Xichao Wang**, Augmenting Code Examples with Embedded Explanations, *July 2016 – June 2017, University of Adelaide, Australia*

**Alantiel Freire Marins**, Summarizing and Measuring Development Activity, *co-supervised with Marco A. Gerosa, started August 2015, Universidade de São Paulo, Brazil*

#### **Honours thesis**

**Patrick Gorman**, Evaluation of WorkItemExplorer through user studies with professional software developers, *co-supervised with Margaret-Anne Storey, September 2011 – December 2011, University of Victoria, Canada*

**Larissa Leite**, An Automatic Approach to Detect and Notify Development Teams of Unusual Events in Software Repositories, *co-supervised with Fernando Figueira Filho, January 2015 – April 2015, Universidade Federal do Rio Grande do Norte, Brazil*

**Undergraduate Research Project**

**Emillie Thiselton**, Synthesising better error messages using Stack Overflow, *started February 2018, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Roland Croft**, Predicting Security Issues Based on Technology Stacks, *co-supervised with M. Ali Babar, started February 2018, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Kieren Chantrell**, Challenges of Software Package Installation, *co-supervised with Nick Falkner, started February 2018, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Ryan Matulick**, Translating natural language text into source code using Stack Overflow data, *co-supervised with Markus Wagner, started February 2018, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Hin Tran**, Understanding the impact of “magic numbers”, *started February 2018, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Matthew Kelly**, Automated Fuzz Testing, *started February 2018, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Francis John Pinaroc**, Integrating code snippets from Stack Overflow into existing source code, *July 2017 – October 2017, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Roland Croft**, Identifying the topics of Stack Overflow discussions, *co-supervised with Thushari Atapattu, July 2017 – October 2017, Topics in Computer Science, University of Adelaide, Australia*

**Peter Dinh**, Crowd based mobile app security analytics, *co-supervised with M. Ali Babar, July 2017 – October 2017, Topics in Computer Science, University of Adelaide, Australia*

**Kevin Dang**, Analyzing the adoption of new programming language features, *February 2017 – June 2017, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Rung Sung Ip**, Automatically generating documentation for lambda expressions in Java, *February 2017 – June 2017, Topics in Computer Science, University of Adelaide, Australia*

**Safwan Ull Karim**, Developing a Bot for Frequently Asked Questions in a Slack channel, *February 2017 – June 2017, Topics in Computer Science, University of Adelaide, Australia*

**Kieren Chantrell**, Intrinsic and Extrinsic Factors which Impact Online Software Installation for Developers, *co-supervised with Nick Falkner, February 2017 – June 2017, Topics in Computer Science, University of Adelaide, Australia*

**Brock Angus Campbell**, Converting Natural Language Text into Source Code Using Stack Overflow Data, *July 2017 – October 2017, Topics in Computer Science, University of Adelaide, Australia*

**Francis John Pinaroc**, Visualizing Unusual Events in GitHub Repositories, *July 2017 – October 2017, Topics in Computer Science, University of Adelaide, Australia*

**Hin Tran**, Evaluating Documentation Needs of Open Source Newcomers, *July 2017 – October 2017, Topics in Computer Science, University of Adelaide, Australia*

**Michelle Cao**, TaskExtractor: A Task Identifying Web Application, *February 2017 – June 2017, Advanced Topics in Computer Science, University of Adelaide, Australia*

**Benjamin Morris**, Automation of SISE and Effect of Co-Reference Resolution, *February 2017 – June 2017, Topics in Computer Science, University of Adelaide, Australia*

**Ben Fisher**, Interface and API Design for Documentation Analysis, *co-supervised with Martin Robillard, January 2014 – April 2014, McGill University, Canada*

## Undergraduate Software Development

**Roland Croft**, Predicting Security Issues Based on Technology Stacks, *co-supervised with M. Ali Babar*, November 2017 – February 2018, University of Adelaide, Australia

**Louis Carsten Griffith**, GitHub summarization with topic modeling, *November 2016 – February 2017*, University of Adelaide, Australia

**Marc Klocke**, TaskNav: Web Platform for Documentation Analysis, *co-supervised with Martin Robillard*, May 2014 – August 2014, McGill University, Canada

**Mathieu Sicard**, TaskNav: Web Platform for Documentation Analysis, *co-supervised with Martin Robillard*, May 2014 – August 2014, McGill University, Canada

**Mathieu Nassif**, Infrastructure for API Documentation Analysis, *co-supervised with Martin Robillard*, May 2013 – August 2013 and May 2014 – August 2014, McGill University, Canada

**Joshua Liben**, Infrastructure for API Documentation Analysis, *co-supervised with Martin Robillard*, May 2013 – August 2013, McGill University, Canada

**Thor Kell**, Development of a workflow support prototype for reverse engineers in a security context, *co-supervised with Brendan Cleary and Margaret-Anne Storey*, January 2012 – April 2012, University of Victoria, Canada

**Patrick Gorman**, Development of WorkItemExplorer, an interactive environment to visually explore issue tracking data, *co-supervised with Lars Grammel and Margaret-Anne Storey*, May 2010 – August 2010 and May 2011 – August 2011, University of Victoria, Canada

## Activities

### *Service to the Community*

**ICSME 2020**: General Co-Chair, with Hongyu Zhang

**ICSME**: Member of the Steering Committee (since 2020)

**Empirical Software Engineering journal**: Editorial Board member

**IEEE Transactions on Software Engineering**: Review Board member

**ACM Transactions on Software Engineering and Methodology**: Member of Board of Distinguished Reviewers

**IEEE Software**: Guest Editor “20 Years of Open Source—Impact on Software Engineering Practice”

**IEEE Software Blog**: Associate Editor (Human Factors)

**IWESEP 2018** PC Co-Chair

**ICSE 2016**: Publicity Team

**ICSE 2014**: Publicity Chair

**UVic SE Colloquium**: Co-organizer of Software Engineering Colloquium at University of Victoria, 2007–2009

## Workshop Organization

**Adelaide Autumn School on Software Engineering 2018**

*with Markus Wagner*

**DySDoc 2018:** Second International Workshop on Dynamic Software Documentation at McGill University's Bellairs Research Institute

*with Martin Robillard and Andrian Marcus*

**DySDoc 2017:** First International Workshop on Dynamic Software Documentation at McGill University's Bellairs Research Institute

*with Martin Robillard and Andrian Marcus*

**SSE 2016:** 8th International Workshop on Social Software Engineering at the Symposium on the Foundations of Software Engineering (FSE) 2016

*with Fabio Calefato and Andrew Begel*

**QualiDASE 2015:** Bellairs 2015 Workshop on Qualitative Data Analysis in Software Engineering at McGill University's Bellairs Research Institute

*with Martin Robillard*

**ProK 2014:** Bellairs 2014 Workshop on Representing Programming Knowledge at McGill University's Bellairs Research Institute

*with Martin Robillard*

**Web2SE 2011:** 2nd International Workshop on Web 2.0 for Software Engineering at the International Conference on Software Engineering (ICSE) 2011

*with Margaret-Anne Storey, Arie van Deursen, Andrew Begel, and Sue Black*

**Web2SE 2010:** First Workshop on Web 2.0 for Software Engineering at the International Conference on Software Engineering (ICSE) 2010

*with Margaret-Anne Storey, Arie van Deursen, and Kate Ehrlich*

**User Interfaces for Visual Analysis and Monitoring in Business Intelligence** at IBM CASCON 2009

*with Lars Grammel and Margaret-Anne Storey*

## Program Committee Memberships

**ESEC/FSE 2022:** 30th Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering

**ICSE 2022:** 44th International Conference on Software Engineering

**MSR 2022:** 19th International Conference on Mining Software Repositories

**SANER 2022 RENE:** Reproducibility Studies and Negative Results @ SANER 2022

**MSR RR 2021:** Registered Reports Track @ MSR 2021

**ICSME NIER 2021:** New Ideas and Emerging Results @ ICSME 2021

**ICSE 2020:** 42nd International Conference on Software Engineering

**ESEC/FSE 2020:** 28th Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering

**ASE 2020:** 35th International Conference on Automated Software Engineering

**MSR 2020:** 17th International Conference on Mining Software Repositories

**MSR RR 2020:** Registered Reports Track @ MSR 2020

**ICGSE 2020:** 15th International Conference on Global Software Engineering

**SANER LBI 2020:** Late Breaking Ideas track of the 27th International Conference on Software Analysis, Evolution and Reengineering

**ICSE 2019:** 41st International Conference on Software Engineering

**ESEC/FSE 2019:** 27th Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering

**ICSME 2019:** 35th International Conference on Software Maintenance and Evolution

**MSR 2019:** 16th International Conference on Mining Software Repositories

**ASE 2019 Demo:** Demo track of the International Conference on Automated Software Engineering

**SCAM RENE 2019:** Replication and Negative Results track of the 19th International Working Conference on Source Code Analysis and Manipulation

**ESEM Industry 2019:** Industry track of the International Symposium on Empirical Software Engineering and Measurement

**SBES 2019:** 33rd Brazilian Symposium on Software Engineering

**IWESEP 2019:** 10th International Workshop on Empirical Software Engineering in Practice

**FSE 2018:** ACM SIGSOFT Symposium on the Foundations of Software Engineering

**SANER 2018:** 25th International Conference on Software Analysis, Evolution and Reengineering

**MSR 2018:** 15th International Conference on Mining Software Repositories

**SBES 2018:** 32nd Brazilian Symposium on Software Engineering

**CSCW 2018:** 21st Conference on Computer-Supported Cooperative Work and Social Computing (External Reviewer)

**SCORE 2018:** Student Contest on Software Engineering @ ICSE 2018

**ICSE 2018 SRC:** Student Research Competition of the 40th International Conference on Software Engineering

**WAPI 2018:** 2nd International Workshop on API Usage and Evolution @ ICSE 2018

**SAGRA 2018:** 4th Workshop on Sustainable Architecture: Global Collaboration, Requirements, Analysis @ ECSA 2018

**ICSE 2017:** 39th International Conference on Software Engineering

**ICSME 2017:** 33rd International Conference on Software Maintenance and Evolution

**SANER 2017:** 24th International Conference on Software Analysis, Evolution, and Reengineering

**ICGSE 2017:** 12th International Conference on Global Software Engineering

**SCAM 2017:** 17th International Working Conference on Source Code Analysis and Manipulation

**SBES 2017:** 31st Brazilian Symposium on Software Engineering

**ICSE 2017 SRC:** Student Research Competition of the 39th International Conference on Software Engineering

**ICSME NIER 2017:** New Ideas track of the 33rd International Conference on Software Maintenance and Evolution

**ISEC 2017:** 10th India Software Engineering Conference

**EAST 2017:** 4th International Workshop on Evidential Assessment of Software Technologies

**CHI 2017:** International Conference of Human-Computer Interaction (External Reviewer, recognized as Excellent Reviewer)

**CSCW 2017:** 20th Conference on Computer-Supported Cooperative Work and Social Computing (External Reviewer)

**SCAM 2016:** 16th International Working Conference on Source Code Analysis and Manipulation

**MSR 2016:** 13th Working Conference on Mining Software Repositories

**SBCARS 2016:** 10th Brazilian Symposium on Software Components, Architectures, and Reuse

**ICGSE 2016:** 11th International Conference on Global Software Engineering

**ICSME ERA 2016:** Early Research Achievements track of the 32nd International Conference on Software Maintenance and Evolution

**FSE 2016 Artifacts Track:** Artifacts track of the 24th International Symposium on the Foundations of Software Engineering

**ICSME 2016 Artifacts Track:** Artifacts track of the 32nd International Conference on Software Maintenance and Evolution

**SANER ERA 2016:** Early Research Achievements track of the 23rd International Conference on Software Analysis, Evolution, and Reengineering

**CSI-SE 2016:** 3rd International Workshop on CrowdSourcing in Software Engineering @ ICSE 2016

**CHASE 2016:** 9th International Workshop on Cooperative and Human Aspects of Software Engineering @ ICSE 2016

**WASHES 2016:** 1st Workshop on Social, Human, and Economic Aspects of Software @ SBQS 2016

**SSE 2015:** 7th International Workshop on Social Software Engineering @ FSE 2015

**OISE 2015:** First Workshop of Open Innovation in Software Engineering

**STIL 2015:** Symposium in Information and Human Language Technology

**ICSME ERA 2015:** Early Research Achievements track of the 31st International Conference on Software Maintenance and Evolution

**SBCARS 2015:** 9th Brazilian Symposium on Software Components, Architectures and Reuse @ CBSOFT 2015

**CHI 2015:** International Conference of Human-Computer Interaction (External Reviewer)

**CSI-SE 2015:** 2nd International Workshop on CrowdSourcing in Software Engineering @ ICSE 2015

**CHASE 2015:** Cooperative and Human Aspects of Software Engineering @ ICSE 2015

**MSR Mining Challenge 2015:** Mining Challenge of the 12th Working Conference on Mining Software Repositories

**MSR 2015:** 12th Working Conference on Mining Software Repositories

**SANER ERA 2015:** Early Research Achievements track of the 22nd IEEE International Conference on Software Analysis, Evolution, and Reengineering

**ICSME 2015:** 31st International Conference on Software Maintenance and Evolution

**SSE 2014:** 6th International Workshop on Social Software Engineering @ FSE 2014

**ICSME ERA 2014:** Early Research Achievements track of the 30th International Conference on Software Maintenance and Evolution

**CSI-SE 2014:** Crowdsourcing in Software Engineering @ ICSE 2014

**CHASE 2014:** Cooperative and Human Aspects of Software Engineering @ ICSE 2014

**MSR 2014:** 11th Working Conference on Mining Software Repositories

**MSR Mining Challenge 2014:** Mining Challenge of the 11th Working Conference on Mining Software Repositories

**CSMR-WCRE Demo 2014:** Tool Demonstrations track of the CSMR-WCRE 2014 Software Evolution Week

**CSMR-WCRE ERA 2014:** Early Research Achievements track of the CSMR-WCRE 2014 Software Evolution Week

**ICSE Posters 2014:** Poster track @ ICSE 2014

**SSE 2013:** 5th International Workshop on Social Software Engineering @ ESEC/FSE 2013

**ICPC ERA 2013:** Early Research Achievements track of the 21st International Conference on Program Comprehension

**ICSE SCORE 2013:** Student Contest on Software Engineering @ ICSE 2013

**ICPC Demo 2013:** Tool demo track of the 21st International Conference on Program Comprehension

**CHASE 2013:** Cooperative and Human Aspects of Software Engineering @ ICSE 2013

**MSR Mining Challenge 2013:** Mining Challenge of the 10th Working Conference on Mining Software Repositories

**CSMR ERA 2013:** Early Research Achievements track of the 17th European Conference on Software Maintenance and Reengineering

**ICPC 2012:** 20th International Conference on Program Comprehension

**ICPC Demo 2012:** Tool demo track of the 20th International Conference on Program Comprehension

**FutureCSD 2012:** The Future of Collaborative Software Development @ CSCW 2012

**FSE NIER 2012:** New Ideas track of the International Symposium on the Foundations of Software Engineering



**FlexiTools 2011:** Flexible Modeling Tools @ ICSE 2011

**PLATEAU 2010:** Evaluation and Usability of Programming Languages and Tools @ SPLASH 2010

**CHASE 2010:** Cooperative and Human Aspects of Software Engineering @ ICSE 2010

### *Journal Reviews*

**EMSE:** Empirical Software Engineering journal (25 papers since 2010, Member of the EMSE Review Board since 2014/2015, Distinguished Reviewer Award in 2017)

**TSE:** IEEE Transactions on Software Engineering (12 papers since 2010)

**IEEE Software** (11 papers since 2012)

**JSS:** Journal of Systems and Software (9 papers since 2015)

**TBIT:** Behaviour & Information Technology (7 papers since 2015)

**JSM:** Journal of Software: Evolution and Process (5 papers since 2014)

**PeerJ** (3 papers since 2015)

**JBCS:** Journal of the Brazilian Computer Society (2 papers since 2016)

**TOIT:** ACM Transactions on Internet Technology (2 papers since 2013)

**TOSEM:** Transactions on Software Engineering and Methodology (2 papers since 2015)

**PLOS One** (2 papers since 2017)

**JISA:** Journal of Internet Services and Applications (1 paper in 2016)

**T-IFS:** IEEE Transactions on Information Forensics and Security (1 paper in 2013)

### *Grant Reviews*

**ARC:** Australian Research Council (9 proposals since 2018)

**NSERC:** Natural Sciences and Engineering Research Council of Canada (1 proposal in 2017)

**NWO:** Netherlands Organisation for Scientific Research (1 proposal in 2019)

**RGC:** Research Grants Council of Hong Kong (1 proposal in 2019)

### *Reviewer*

**APSEC:** Asia-Pacific Software Engineering Conference, 2016

**ASE:** International Conference Automated Software Engineering, 2013, 2016

**ICSE:** International Conference on Software Engineering, 2013, 2012, 2010, 2009, 2008

**ICSM:** International Conference on Software Maintenance, 2011

**ESEC/FSE:** Joint meeting of the European Software Engineering Conference and the Symposium on the Foundations of Software Engineering, 2011, 2013

**FSE:** International Symposium on the Foundations of Software Engineering, 2010, 2014

**InfoVis:** Symposium on Information Visualization, 2009, 2008

**VL/HCC:** Symposium on Visual Languages and Human-Centric Computing, 2009, 2008

**CHASE:** Cooperative and Human Aspects of Software Engineering, 2008

**Book:** Graph Data Management: Techniques and Applications (*Eds. S. Sakr and E. Pardede*)

## Awards

**2020:** Google Faculty Research Award, USD 39,722 (*with Sebastian Baltes and Markus Wagner*)

**2018 – 2020:** ARC Discovery Early Career Researcher Award (DECRA), AUD 361,446

**2018 – 2019:** NC State - University of Adelaide Starter Grant, USD 9,740 + AUD 9,565 (*with Emerson Murphy-Hill*)

**2017:** JSPS Postdoctoral Fellowship for Research in Japan, Short-term Program

**2017:** Distinguished Reviewer Award for Outstanding Service as a Reviewer for the Journal on Empirical Software Engineering

**2015:** Post-doctoral Fellowship from FAPESP, the São Paulo Research Foundation

**2015:** Best Paper Award at SBSC 2015 (*with Renato Ferreira, Muller Miranda, Fernando Figueira Filho, Cleidson de Souza, and Leif Singer*)

**2014 – 2015:** Young Talents Scholarship from CNPq's Science Without Borders program, a Brazilian government research initiative

**2013:** Most Promising Idea Award at ICPC 2013 (*with Chris Parnin and Margaret-Anne Storey*)

**2013:** Winner of Stack Overflow Visualization Contest (*with Lars Grammel and Chris Parnin*)

**2008 – 2011:** IBM CAS PhD fellowship

**2007 – 2008:** University of Victoria fellowship

**2004 – 2007:** Scholarship from German National Merit Foundation (*Studienstiftung des deutschen Volkes*)

**2005 – 2006:** Hölderlin Scholarship from SAP AG, Germany

**2003 – 2007:** Scholarship from e-fellows.net GmbH, Germany

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