Tobias **Dürschmid**

Ph.D. Student in Software Engineering at Carnegie Mellon University, Institute of Software Research

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"Making Quality Attributes First-Class Elements of Software Development."

Education

PhD Student in Software Engineering
Carnegie Mellon University, Institute for Software Research

Pittsburgh, PA, USA
Since Aug. 2018

- Advisors: David Garlan and Eunsuk Kang
- Specialization in Modeling and Analysis of Quality Attributes in Software Architectures
- Coursework: Software Engineering Research; Empirical Methods in Software Engineering; Architectures for Software Systems

Graduate Student in IT-Systems Engineering
Hasso Plattner Institute, University of Potsdam

Potsdam, Germany
Oct. 2017 – Jul. 2018

- Specialization in Software Engineering
- Coursework: Mining Software Repositories; Software Testing, Verification, and Analysis; Software Engineering for Self-adaptive Systems

B.Sc. in IT-Systems Engineering
Hasso Plattner Institute, University of Potsdam

Potsdam, Germany
Oct. 2014 – Sep. 2017

- Specialization in Software Architecture & Modeling Technology
- Selected Coursework: Modeling I + II; Software Architecture; Software Engineering I+II; Math I+II; Computer Graphics I+II; Mobile Image Processing; Human Computer Interaction; Introduction to Programming I+II; Database Systems
- Grade: "1.1 (with distinction)" equals GPA 4.0 / 4.0 (https://www.foreigncredits.com/Resources/GPA-Calculator/Germany)

Employment

Software Engineering Intern
NASA Jet Propulsion Laboratory

Pasadena, CA
Jun. 2020 – Aug. 2020

- Developing a modeling and analysis technique for quality attributes of small scale flight software systems in F' and F".

Software Engineer for Mobile Graphics
Hasso Plattner Institute / University of Potsdam, Computergraphics Systems Research Group

Potsdam, Germany
Mar. 2016 – Jul. 2018

- Design, implementation, and evaluation of a framework for mobile image stylization

Student Research Assistent
Hasso Plattner Institute, System Analysis and Modeling Research Group

Potsdam, Germany
Dec. 2014 – Mar. 2015

- Model-driven description of refactorings for an incremental recovery engine

Teaching

Co-Instructor – Design Patterns & API Design (17-625)
Carnegie Mellon University, Insitute for Software Research

Pittsburgh, PA, USA
Aug. 2020 – Dec. 2020

- Designing a new course, giving lectures, assignments, and recitations

Teaching Assistent – Models of Software Systems (17-651)
Carnegie Mellon University, Insitute for Software Research

Pittsburgh, PA, USA
Aug. 2019 – Dec. 2019

- Grading homework, giving office hours, recitations, and lectures

Teaching Assistant – Software Engineering II
Hasso Plattner Institute, Enterprise Platforms and Integration Concepts Research Group

Potsdam, Germany
Oct. 2017 – Mar. 2018

- Tutoring students in agile large-scale software engineering projects

Teaching Assistent – Modeling I
Hasso Plattner Institute, System Analysis and Modeling Research Group

Potsdam, Germany
Oct. 2015 – Feb. 2016

- Grading homework, giving office hours, and recitations

Honors & Awards

Nov. 2017	**Best Paper Award**, SIGGRAPH ASIA Mobile Graphics and Interactive Applications	*Bangkok, Thailand*
Apr. 2017	**1. Place in the ACM Student Research Competition**, International Conference on the Art, Science and Engineering of Programming	*Brussels, Belgium*
2014 – Sep. 2019	**Scholarship of the "Studienstiftung des deutschen Volkes" (German Academic Scholarship Foundation)**, Largest scholarship in Germany, given to less than 0.5% of all students in Germany	*Germany*

Volunteering Services

Member of the SCS4All PhD Initiative   *Pittsburgh, PA, USA*

Carnegie Mellon University, School of Computer Science   *since Mar. 2019*

- Provide support to overcome the issues that student experience at the School of Computer Science at CMU
- Leading the group as a co-director since Aug 2019 – Jan 2020

Head of Student Society "Klub Schüleraktivitäten" - Club for Pupils Activities   *Potsdam, Germany*

Hasso Plattner Institute   *Mar. 2015 - Mar. 2016*

- Organizing multiple multi-day computer science camps for pupils

Member of Student Society "Klub Schüleraktivitäten" - Club for Pupils Activities   *Potsdam, Germany*

Hasso Plattner Institute   *Oct. 2014 - Jul. 2018*

- Coaching pupils in computer science and software development

Talks & Presentations

Presenter for "Trade-off-Oriented Development - Making Quality Attribute Trade-offs First-Class"   *Montreal, Canada*

ACM/IEEE International Conference on Software Engineering   *Nov. 2017*

Presenter for "ProsumerFX: Mobile Design of Image Stylization Components"   *Bangkok, Thailand*

ACM SIGGRAPH Asia Symposium on Mobile Graphics and Interactive Applications   *Nov. 2017*

Presenter for "Towards Architectural Styles for Android App Software Product Lines"   *Buenos Aires, Argentina*

IEEE/ACM International Conference on Mobile Software Engineering and Systems   *May 2017*

Poster presentation and research talk of "Continuous Code Reviews: A Social Coding tool for Code Reviews inside the IDE"   *Bruessels, Belgium*

ACM Student Research Competition at ‹Programming›   *Apr. 2017*

Poster presentation of "Design Pattern Builder: A Concept for Refinable Reusable Design Pattern Libraries"   *Amsterdam, Nederlands*

ACM Student Research Competition at SPLASH   *Nov. 2016*

Publications

[1] Benjamin Gafford, Tobias Dürschmid, Gabriel A. Moreno, and Eunsuk Kang. "Synthesis-Based Resolution of Feature Interactions in Cyber-Physical Systems". In: *Proceedings of the 35th IEEE/ACM International Conference on Automated Software Engineering.* ASE '20. 2020.

[2] Tobias Dürschmid, Eunsuk Kang, and David Garlan. "Trade-off-Oriented Development – Making Quality Attribute Trade-offs First-Class". In: *Proceedings of the 41th International Conference on Software Engineering: New Ideas and Emerging Results Track*. ICSE-NIER '19. 2019.

[3] Christoph Matthies, Johannes Huegle, Tobias Dürschmid, and Ralf Teussner. "Attitudes, Beliefs, and Development Data Concerning Agile Software Development Practices". In: *Proceedings of the 41th International Conference on Software Engineering: Software Engineering Education and Training Track*. ICSE-SEET '19. 2019.

[4] Robert Hirschfeld, Tobias Dürschmid, Patrick Rein, and Marcel Taeumel. "Cross-cutting Commentary: Narratives for Multi-party Mechanisms and Concerns". In: *Proceedings of the 10th International Workshop on Context-Oriented Programming: Advanced Modularity for Run-time Composition*. COP '18. 2018, pp. 39–47.

[5] Matthias Trapp, Sebastian Pasewaldt, Tobias Dürschmid, Amir Semmo, and Jürgen Döllner. "Teaching Image-Processing Programming for Mobile Devices: A Software Development Perspective". In: *EG 2018 - Education Papers*. 2018.

[6] Tobias Dürschmid, Maximilian Söchting, Amir Semmo, Matthias Trapp, and Jürgen Döllner. "ProsumerFX: Mobile Design of Image Stylization Components". In: *SIGGRAPH ASIA 2017 Mobile Graphics and Interactive Applications*. SA'17. Bangkok, Thailand, 2017.

[7] Tobias Dürschmid, Matthias Trapp, and Jürgen Döllner. "Towards Architectural Styles for Android App Software Product Lines". In: *Proceedings of the IEEE/ACM International Conference on Mobile Software Engineering and Systems*. MOBILESoft '17. 2017, pp. 58–62.

[8] Tobias Dürschmid. "Continuous Code Reviews: A Social Coding Tool for Code Reviews Inside the IDE". In: *Companion to the International Conference on the Art, Science and Engineering of Programming*. Programming '17. 2017, 41:1–41:3.

[9] Amir Semmo, Tobias Dürschmid, Matthias Trapp, Mandy Klingbeil, Jürgen Döllner, and Sebastian Pasewaldt. "Interactive Image Filtering with Multiple Levels-of-control on Mobile Devices". In: *SIGGRAPH ASIA 2016 Mobile Graphics and Interactive Applications*. SA '16. 2016, 2:1–2:8.

[10] Tobias Dürschmid. "Design Pattern Builder: A Concept for Refinable Reusable Design Pattern Libraries". In: *Companion Proceedings of the 2016 ACM SIGPLAN International Conference on Systems, Programming, Languages and Applications: Software for Humanity*. SPLASH Companion '16. 2016, pp. 45–46.

[11] Thijs Roumen, Bastian Kruck, Tobias Dürschmid, Tobias Nack, and Patrick Baudisch. "Mobile Fabrication". In: *Proceedings of the 29th Annual Symposium on User Interface Software and Technology*. UIST '16. 2016, pp. 3–14.