

# Fabio Niephaus

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## Education

- Oct 2017 – present **Ph.D. Student**, *Software Architecture Group, Hasso Plattner Institute, Potsdam, Germany.*  
Advisor: Prof. Dr. Robert Hirschfeld
- Oct 2014 – Aug 2017 **M.Sc. (Dist) in IT-Systems Engineering**, *Hasso Plattner Institute, Potsdam, Germany.*  
*Relevant coursework:* Virtual Machine and Execution Environments, Live Programming Systems, Module systems, Web-based Development Environments, Global Team-Based Product Innovation & Engineering (ME310).
- Oct 2011 – Jul 2014 **B.Sc. (Dist) in IT-Systems Engineering**, *Hasso Plattner Institute, Potsdam, Germany.*  
*Relevant coursework:* Software Architecture, Software Engineering, Operating Systems, Database Systems, Internet and WWW Technologies, Advanced Techniques in Practical System and Networking Security, Designing Interactive Systems (HCI).
- Aug 2001 – Aug 2010 **German Abitur**, *Grafschafter Gymnasium, Moers, Germany.*

## Experience

- Apr 2007 – present **Freelance Software Engineer and Consultant**, Potsdam, Germany.  
*Notable clients:* Maton Guitars, Modeagentur Bucksch GmbH & Co. KG.
- Jun 2017 – Sep 2017 **Software Engineering Intern**, *Google, Mountain View, CA, USA.*  
Designed and implemented a live feedback mechanism for the IPython-based Colaboratory data analysis tool and improved its interactive debugger, both to increase the productivity of hundreds of search engineers and thousands of other users. Facilitated Design Thinking training sessions.
- Apr 2014 – Jun 2017 **Teaching Assistant**, *Software Architecture Group, HPI, Potsdam, Germany.*  
Supervised student projects for the Software Architecture and Software Engineering lectures.
- Aug 2015 – Mar 2016 **Site Reliability Engineering Intern**, *Google, Dublin, Ireland.*  
Designed and built an internal customer dashboard for Google's offline storage system and worked on its monitoring and backend components. Facilitated Design Thinking training sessions.
- Aug 2012 – Mar 2014 **Public Relations Assistant**, *Hasso Plattner Institute, Potsdam, Germany.*  
Managed website and social media channels.
- Nov 2010 – Jul 2011 **Full Time Intern**, *Maton Guitars, Melbourne, Australia.*

## Notable Publications

- Jul 2018 **GraalSqueak: A Fast Bytecode Interpreter Written in an AST Interpreter Framework.**  
F. Niephaus, T. Felgentreff, R. Hirschfeld.  
In Proceedings of the 13th IC00OLPS Workshop, 2018.
- Jul 2018 **Towards Version Control in Object-based Systems.**  
J. Reschke, M. Taeumel, T. Pape, F. Niephaus, R. Hirschfeld.  
HPI Technical Reports, vol. 121, 2018, Hasso Plattner Institute.
- Mar 2018 **Live Multi-language Development and Runtime Environments.**  
F. Niephaus, T. Felgentreff, T. Pape, R. Hirschfeld, M. Taeumel.  
In Journal on The Art, Science, and Engineering of Programming, vol. 2, no. 3, art. 8, 2018.
- Aug 2017 **Squeak Makes a Good Python Debugger.**  
F. Niephaus, T. Felgentreff, T. Pape, R. Hirschfeld.  
In Proceedings of the Programming Experience 2017 (PX/17) Workshop, 2017.

- Aug 2016 **smalltalkCI: A Continuous Integration Framework for Smalltalk Projects.**  
F. Niephaus, D. Henrichs, M. Taeumel, T. Pape, T. Felgentreff, R. Hirschfeld.  
In Proceedings of the International Workshop on Smalltalk Technologies, 2016.
- Mar 2016 **Matriona: Class Nesting with Parameterization in Squeak/Smalltalk.**  
M. Springer, F. Niephaus, H. Masuhara, R. Hirschfeld.  
In Proceedings of the 15th International Conference on Modularity, 2016.
- Jul 2015 **Call-target-specific Method Arguments.**  
F. Niephaus, M. Springer, T. Felgentreff, T. Pape, R. Hirschfeld.  
In Proceedings of the 10th IC00OLPS Workshop, 2015.
- Feb 2015 **ecoControl: Optimizing Heterogeneous Energy Systems in Residential Buildings.**  
Herbst, Maschler, Niephaus, Reimann, Steier, Felgentreff, Lincke, Taeumel, Hirschfeld, Witt.  
HPI Technical Reports, vol. 93, 2015, Hasso Plattner Institute.

## Notable Projects

- Dec 2017 – present **GraalSqueak: A Squeak/Smalltalk implementation for the GraalVM.**  
Implemented a fast bytecode interpreter for Squeak/Smalltalk in the Truffle language implementation framework which enables new experiments in the domain of polyglot programming.
- Jan 2017 – Jun 2017 **Squimera: A Live, Smalltalk-based IDE for Dynamic Programming Languages.**  
Composed RPython-based implementations of Python, Ruby, and Squeak/Smalltalk and reused the tools of a Smalltalk programming environment in such a way that they provide a consistent programming experiences across the different languages.
- Apr 2016 – Aug 2016 **Master's Project on Virtual Execution Environments.**  
Worked on a Smalltalk virtual machine written in RPython. Integrated SQLite, so that programming language and query language are executed by the same VM using the same JIT compiler.
- Oct 2014 – Jul 2015 **ME310 Global Team-based Product Innovation & Engineering.**  
Worked on a design challenge in corporation with Stanford University and University of St. Gallen. Developed a prototype to improve the collaboration between engineers at ThyssenKrupp, using Design Thinking methodologies.

## Scholarships & Awards

- Oct 2017 – present **Scholar of the HPI Research School.**
- Oct 2011 – present **e-fellows.net Scholar.**
- Dec 2011 – Jun 2017 **Scholar of the German National Academic Foundation.**
- Apr 2017 **ACM Student Research Competition Winner**, *«Programming» 2017*, Brussels, Belgium.
- Oct 2014 **Google Award**, *Best Integration of Android Wear*, HackZurich 2014, Zürich, Switzerland.

## Extracurricular Activities

- Mar 2018 – present **Publicity Co-Chair**, *Organizing Committee*, *«Programming» 2018*.
- Oct 2017 – present **Publications Co-Chair**, *Organizing Committee*, SPLASH 2018.
- Jul 2015 – present **Student Volunteer**, ECOOP '15/'16/'18, ESUG '16, *«Programming» '17*, SPLASH '17.
- Apr 2014 – present **Assistant Basketball Coach**, *College Sports*, University of Potsdam.
- Jun 2012 – Jun 2013 **Scholarship Student Representative**, German National Academic Foundation.
- Mar 2009 – Aug 2010 **School Council President**, Graftschafter Gymnasium Moers.
- Aug 2008 **Deutsche SchülerAkademie**, Bildung & Begabung gGmbH.

## Other

- Languages German (native), English (fluent), French (basic).
- Interests Music, electric and acoustic guitars, basketball, sports, movies, traveling, embedded systems (e.g. Raspberry Pi).
- Memberships ACM, Squeak e.V., CdE e.V.