Tim FELGENTREFF

timfelgentreff@gmail.com
https://www.timfelgentreff.de
Elbingeroder Str. 22, 16341 Panketal Germany

Profile

I am the technical lead of the GraalPy implementation of Python in the GraalVM team at Oracle Labs. I was led here by my interests in programming languages and virtual machine design, and my involvement with the PyPy/RPython project and various other dynamic language VMs. My work revolves around dynamic language interoperability, connecting them with native C code in a safe manner, and providing cross-language tool support. I also continue to collaborate with the HPI at the University of Potsdam on tools and environments for dynamic languagues and polyglot programming.

Education

2012-2017	**Dr.rer-nat.**, *Hasso Plattner Institute, University of Potsdam*, Potsdam, Germany grade: summa cum laude advisor: Robert Hirschfeld, Hasso Plattner Institute, University of Potsdam additional reviewers: Wolfgang de Meuter, Vrije Universiteit Brussel Alan Kay, Viewpoints Research Institute In my thesis I presented Babelsberg, a formal design with multiple implementations for object-constraint programming to integrate constraint declaration and continuous satisfaction with mutable object-oriented structures and behavior.
Doctoral Thesis	The Design and Implementation of Object-Constraint Programming
2010-2012	**M.Sc.**, *Hasso Plattner Institute, University of Potsdam*, Potsdam, Germany final grade: 1.0 (A+) During my master's studies, I focused on programming language concepts to facilitate development tools, end-user programming, modularity, and meta-circularity especially in distributed and parallel programming settings.
Master's Thesis	Comparison, Replay, and Refinement of Communication Traces for Debugging Distributed Failures
2007-2010	**B.Sc.**, *Hasso Plattner Institute, University of Potsdam*, Potsdam, Germany final grade: 1.4 (A)
Bachelor's Thesis	Post-mortem Analysis of Debug Traces
2005-2007	**Abitur**, *Pückler Grammar School*, Cottbus, Germany final grade: 1.0 (A+)
2004-2005	**AS-level studies**, *Budehaven Community College*, Bude, England
2000-2004	**GCSE-level studies**, *Heinrich-Heine Grammar School*, Cottbus, Germany

Experience

July 2017-present — **Consulting Researcher**, *Oracle Labs Germany*, Potsdam, Germany
At Oracle Labs I am a member of the Truffle/Graal group working on virtual machine technology for dynamic languages. I am the team lead for the high-performance Python implementation on GraalVM. I am also the initiator for multiple research collaborations with the Hasso Plattner Institute on tools and environments for polyglot programming and with the University of Cape Town on native extension APIs for managed programming runtimes.

Apr 2016-June 2017 — **Research Assistant**, *Hasso Plattner Institute, University of Potsdam*, Potsdam, Germany
My research focused on novel programming paradigms, virtual machines for dynamic programming languages, and end-user programming with a special interest in computer science education for children.

Oct 2012-Apr 2016 — **Ph.D. Student**, *Hasso Plattner Institute, University of Potsdam*, Potsdam, Germany
My Ph.D. research focused on object-constraint programming, a novel approach at combining constraint solvers with dynamic, object-oriented languages in a clean and powerful way.

Oct 2014-Dez 2014 — **Research Visit**, *Nanjing University*, Nanjing, China
At Nanjing University I collaborated with researchers on emotion analysis in Twitter-like social networks.

Feb 2010-Oct 2012 — **Working Student**, *Finn GmbH*, Berlin, Germany
At Finn GmbH I was involved in plugin development for Redmine.

Oct 2009-Oct 2012 — **Working Student**, *Hasso Plattner Institute*, Potsdam, Germany
I was a tutor at the Software Architecture Group, assisting the staff with undergraduate lectures on software engineering and software development methodologies, using Squeak/Smalltalk as the educational language.

Aug 2011-Nov 2011 — **Intern**, *VMware*, Beaverton, OR, USA
At VMware I was working on the MagLev Ruby VM built on top of the distributed GemStone/S Smalltalk object database system.

May 2010-Aug 2010 — **Ruby Summer of Code Participant**
As part of the 2010 Ruby Summer of Code, I built out prototype work by Wayne Meissner to add support for Ruby C extensions to JRuby.

Teaching

Winter 2024/25 — Build your own Programming Language *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Dr. Tim Felgentreff (ext), Dr. Fabio Niephaus (ext)*

Summer 2024 — Software Design *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Dr. Marcel Taeumel, Tom Beckmann, Dr. Tim Felgentreff (ext), Dr. Fabio Niephaus (ext)*

Winter 2023/24 — Reverse Engineering *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Dr. Marcel Taeumel, Dr. Tim Felgentreff (ext), Dr. Fabio Niephaus (ext)*

Summer 2023 — Master's Project: Building Machine Learning Macro-Services with GraalPy and Micronaut *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Dr. Tim Felgentreff (ext), Dr. Fabio Niephaus (ext)*

Winter 2020/21 — Introduction to Programming Technology 1 *Prof. Dr. Robert Hirschfeld, Tom Beckmann, Toni Mattis, Tobias Pape, Fabio Niephaus, Dr. Tim Felgentreff (ext)*

Software Architecture *Prof. Dr. Robert Hirschfeld, Patrick Rein, Marcel Taeumel, Dr. Jens Lincke, Fabio Niephaus, Dr. Tim Felgentreff (ext)*

Summer 2020 — Polyglot Programming *Prof. Dr. Robert Hirschfeld, Fabio Niephaus, Dr. Tim Felgentreff (ext)*

Winter 2019/20 — Programming Experience *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Patrick Rein, Marcel Taeumel, Toni Mattis, Dr. Tim Felgentreff (ext)*

Master's Project: Software Development Tools for Polyglot Programming *Prof. Dr. Robert Hirschfeld, Fabio Niephaus, Dr. Tim Felgentreff (ext)*

Summer 2019 — Virtual Machines and Execution Environments *Prof. Dr. Robert Hirschfeld, Tobias Pape, Fabio Niephaus, Dr. Tim Felgentreff (ext)*

Polyglot Programming *Prof. Dr. Robert Hirschfeld, Fabio Niephaus, Dr. Tim Felgentreff (ext)*

Winter 2018/19 — Introduction to Programming Technology 1 *Prof. Dr. Robert Hirschfeld, Tobias Pape, Johannes Henning, Toni Mattis, Stefan Ramson, Dr. Tim Felgentreff (ext)*

Software Architecture *Prof. Dr. Robert Hirschfeld, Patrick Rein, Fabio Niephaus, Marcel Taeumel, Dr. Jens Lincke, Dr. Tim Felgentreff (ext)*

Summer 2018 — Master's Thesis: Daniel Stolpe - Graal-LSP: A Language Server Implementation with Polyglot Support for the GraalVM *Prof. Dr. Robert Hirschfeld, Dr. Tim Felgentreff (ext)*

Programming Experience *Prof. Dr. Robert Hirschfeld, Patrick Rein, Marcel Taeumel, Toni Mattis, Dr. Jens Lincke, Stefan Ramson, Dr. Tim Felgentreff (ext)*

Virtual Machines and Execution Environments *Prof. Dr. Robert Hirschfeld, Fabio Niephaus, Tobias Pape, Johannes Henning, Dr. Tim Felgentreff (ext)*

Winter 2017/18	Code Repository Mining *Prof. Dr. Robert Hirschfeld, Tobias Pape, Marcel Taeumel, Dr. Jens Lincke, Patrick Rein, Stefan Ramson, Toni Mattis, Johannes Henning, Fabio Niephaus, Dr. Tim Felgentreff (ext)*
	Context-oriented Programming *Prof. Dr. Robert Hirschfeld, Tobias Pape, Marcel Taeumel, Dr. Jens Lincke, Patrick Rein, Stefan Ramson, Toni Mattis, Johannes Henning, Fabio Niephaus, Dr. Tim Felgentreff (ext)*
	Programming Languages: Design and Implementation *Prof. Dr. Robert Hirschfeld, Tobias Pape, Marcel Taeumel, Dr. Jens Lincke, Patrick Rein, Stefan Ramson, Toni Mattis, Johannes Henning, Fabio Niephaus, Dr. Tim Felgentreff (ext)*
Summer 2017	Master's Thesis: Fabio Niephaus - Squimera: A live, Smalltalk-based IDE for Scripting Languages *Prof. Dr. Robert Hirschfeld, Dr. Tim Felgentreff*
	Master's Thesis: Bastian Kruck - Crossing Abstraction Barriers When Debugging Code Transformations: Live Debugging With Compilers *Prof. Dr. Robert Hirschfeld, Dr. Tim Felgentreff*
	Software Engineering *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Tobias Pape, Patrick Rein, Marcel Taeumel, Toni Mattis, Stefan Ramson, Dr. Tim Felgentreff*
Winter 2016/17	Software Architecture *Prof. Dr. Robert Hirschfeld, Tobias Pape, Marcel Taeumel, Patrick Rein, Dr. Jens Lincke, Dr. Michael Perscheid, Tim Felgentreff, Stefan Ramson*
	Live Programming Systems *Prof. Dr. Robert Hirschfeld, Stefan Ramson, Tim Felgentreff, Patrick Rein*
	Software Design *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Stefan Ramson, Tim Felgentreff*
	Virtual Machines and Execution Environments *Prof. Dr. Robert Hirschfeld, Tobias Pape, Tim Felgentreff*
	openHPI Online Course: "Zusammenhänge entdecken, Phänomene verstehen: Programmieren mit Etoys" *Tim Felgentreff*
Summer 2016	Software Engineering *Prof. Dr. Robert Hirschfeld, Tobias Pape, Patrick Rein, Marcel Taeumel, Dr. Jens Lincke, Stefan Ramson, Toni Mattis, Tim Felgentreff, Dr. Michael Perscheid*
	End-user Programming *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Patrick Rein, Marcel Taeumel*
	Web-based Development Environments *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Stefan Ramson, Patrick Rein, Tim Felgentreff*
Winter 2015/16	Bachelor's Project: Improving Hosted Continuous Integration Services *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Dr. Jens Lincke*
	Master's Project: Spur to go faster: Low-level Functionality in a High-Level Language *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Tobias Pape, Marcel Taeumel*
	Introduction to Programming Technology 1 *Prof. Dr. Robert Hirschfeld, Tobias Pape, Toni Mattis, Tim Felgentreff, Marcel Taeumel, Dr. Jens Lincke, Stefan Ramson*
	Software Architecture *Prof. Dr. Robert Hirschfeld, Tobias Pape, Marcel Taeumel, Patrick Rein, Dr. Jens Lincke, Tim Felgentreff, Dr. Michael Perscheid, Stefan Ramson*
	Programming Language Concepts, Tools, and Environments *Prof. Dr. Robert Hirschfeld, Patrick Rein, Tim Felgentreff, Marcel Taeumel, Toni Mattis*
	Software Design *Prof. Dr. Robert Hirschfeld, Dr. Jens Lincke, Tim Felgentreff, Stefan Ramson*
Summer 2015	Constraint-based Programming *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Jens Lincke*
	Master's Thesis: Stefan Lehmann - Scoping Constraints and Reactive Behavior: Towards a Practical Object Constraint Programming Tool *Prof. Dr. Robert Hirschfeld, Tim Felgentreff*
Winter 2014/15	Master's Thesis: Maria Graber - Specifying and Solving Logic Puzzles with Babelsberg/S *Prof. Dr. Robert Hirschfeld, Tim Felgentreff*
	Master's Thesis: Anton Gulenko - Allocation Removal in Modern Object Oriented VMs *Prof. Dr. Robert Hirschfeld, Tim Felgentreff*
	Bachelor's Project: Example-driven Exploration in Dynamically-typed Programming Environments *Prof. Dr. Robert Hirschfeld, Marcel Taeumel, Jens Lincke, Tim Felgentreff*
	Programming Language Concepts *Prof. Dr. Robert Hirschfeld, Marcel Taeumel, Tobias Pape, Tim Felgentreff*
	Software Architecture *Prof. Dr. Robert Hirschfeld, Tobias Pape, Marcel Taeumel, Dr. Michael Perscheid, Jens Lincke, Tim Felgentreff*
	Context-oriented Programming *Prof. Dr. Robert Hirschfeld, Jens Lincke, Marcel Taeumel, Tobias Pape, Tim Felgentreff*

Virtual Machines and Execution Environments *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Tobias Pape*

Module Systems *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Jens Lincke, Marcel Taeumel, Tobias Pape*

Summer 2014   Master's Thesis: Philipp Tessenow - Extending a Dynamic Programming Language and Runtime Environment with Access Control *Prof. Dr. Robert Hirschfeld, Gilad Bracha (ext), Tim Felgentreff*

Master's Project: Software Transactional Memory for RSqueak/VM *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Tobias Pape*

Virtual Machines and Execution Environments *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Tobias Pape*

Constraint-based Programming *Prof. Dr. Robert Hirschfeld, Tim Felgentreff*

Winter 2013/14   Master's Thesis: Lars Wassermann - Tracing Algorithmic Primitives in R/SqueakVM *Prof. Dr. Robert Hirschfeld, Tim Felgentreff*

Bachelor's Project: ecoControl: Entwurf und Implementierung einer Software zur Optimierung heterogener Energiesysteme in Mehrfamilienhäusern *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Jens Lincke, Marcel Taeumel*

Introduction to Programming Technology 1 *Prof. Dr. Robert Hirschfeld, Marcel Taeumel, Tim Felgentreff, Tobias Pape*

Software Architecture *Prof. Dr. Robert Hirschfeld, Prof. Dr. Robert Hirschfeld, Bastian Steinert, Marcel Taeumel, Tim Felgentreff, Tobias Pape*

Virtual Machines and Execution Environments *Prof. Dr. Robert Hirschfeld, Bastian Steinert, Tim Felgentreff, Tobias Pape*

Summer 2013   Interactive Representations of Data Structures and Algorithms *Prof. Dr. Robert Hirschfeld, Jens Lincke, Marcel Taeumel, Tim Felgentreff*

Winter 2012/13   Bachelor's project: MagLev – Object Persistence with Ruby and Smalltalk *Prof. Dr. Robert Hirschfeld, Tim Felgentreff, Tobias Pape*

Software Architecture *Prof. Dr. Robert Hirschfeld, Jens Lincke, Dr. Michael Perscheid, Marcel Taeumel, Tim Felgentreff*

Module Systems *Prof. Dr. Robert Hirschfeld, Bastian Steinert, Marcel Taeumel, Tim Felgentreff*

Skills

Languages	German - native proficiency English - full professional proficiency French - limited working proficiency Mandarin - rudimentary knowledge
Free and Open Source Projects	GraalPy - an implementation of Python 3 for the GraalVM Babelsberg - a family of object-constraint languages RSqueakVM - a research Squeak/Smalltalk VM written in RPython TruffleSqueak - a research Squeak/Smalltalk VM on the GraalVM Squeak - a modern implementation of Smalltalk-80 Topaz - an experimental Ruby implementation written in RPython Lively Kernel - a self-supporting development environment on a Web page Stratagus - a real-time 2d strategy game engine MagLev - a Ruby implementation on top of the GemStone/S object-database JRuby - an industry-grade Ruby implementation on the JVM PyPy - a fast Python implementation with a tracing just-in-time compiler ACE - a game development library for classic Amiga computer in C
Invited Talks	JUG Berlin, May 2023 - "GraalPy - Java ❤ Python" JUG Düsseldorf, Jul 2019 - "Python on GraalVM" JUG Hamburg, Jun 2019 - "Python on GraalVM" ESUG 2016 - "Presenting Etoys 6" ESUG 2016 - "RSqueak/VM Tutorial" CRAFT 2014 - "Babelsberg - Modularizing Constraint Satisfaction in Imperative Programs" Wroclove.rb 2013 - "Topaz Ruby" Workshop on Context-Oriented Programming 2013 - "A Tool Building Example: Layers as Source Code Packages" Portland Ruby Brigade, Sep 2011 - "Debugging on Steroids - what Ruby should learn from Smalltalk" Ruby User Group - Berlin, Oct 2011 - "Building the fastest Ruby yet" RubyConf 2010 - "C-extensions for JRuby" JaX 2010 - "Versionskontrolle: Zentral oder Verteilt?"
In the Media	Deutschlandfunk "Computer und Kommunikation", Jun 2014 - "Babelsberg - Eine neue Programmiersprache" rbb "Brandenburg aktuell" Jan 2016 - Programmieren für Kinder Potsdamer Neueste Nachrichten, Jun 2014 - "Der Babelsberg-Code" Heise, Jun 2014 - "HPI stelllt neue Programmiersprache Babelsberg vor"
Hobbies	I tinker with, do repairs and improvements on, and program for old hardware (PET, C64, Amiga, Atari) I run 10 kilometers in less than 50 minutes

Selected Scientific Community Participation

PC Member	ECOOP 2020 Programming Experience Workshop 2020 Onward! 2019 Workshop on Reactive and Event-based Languages & Systems (REBLS) 2016, 2017, 2019 Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems Workshop 2016, 2017, 2019 Modularity! Student Research Competition 2016 Workshop on Dynamic Languages and Applications 2014 SPLASH Artifact Evaluation Committee 2014 Organizer, PC- or SC-Chair ~ Truffle Workshop (co-located with ECOOP 2022) ~ Dynamic Languages Symposium 2018, 2019, 2020 ~ Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems Workshop 2018 ~ Constrained and Reactive Objects Workshop 2016
Reviewer	ECOOP 2018 <Programming> 2017, 2018 Programming Experience Workshop 2017 Workshop on Meta-Programming Techniques and Reflection 2016 Object-Oriented Programming Languages and Systems @ SAC 2015, 2016 Dynamic Languages Symposium 2014, 2015, 2016 GI-IT 2014 Onward! 2014 Symposium on Open Collaboration 2014

Publications

Clément Béra, Eliot Miranda, Tim Felgentreff, Marcus Denker, and Stéphane Ducasse. **"Sista: Saving Optimized Code in Snapshots for Fast Start-up"**. In *Proceedings of the 14th International Conference on Managed Languages and Runtimes, ManLang 2017, Prague, Czech Republic, September 27 - 29, 2017*, 1–11, 2017. doi: 10.1145/3132190.3132201 https://doi.org/10.1145/3132190.3132201.

Tim Felgentreff. **"Checks and Balances: Object-Constraints Without Surprises"**. In *Proceedings of the 9th Ph.d. Retreat of the HPI Research School on Service-Oriented Systems Engineering*. Tech. rep. 100. Hasso Plattner Institute, 2016.

Tim Felgentreff. **"Implementing an Object-Constraint Extension Without VM Support"**. In *Proceedings of the 8th Ph.d. Retreat of the HPI Research School on Service-Oriented Systems Engineering*. Tech. rep. 95. Hasso Plattner Institute, 2015.

Felgentreff, Tim, ed. ***Proceedings of the 14th ACM SIGPLAN International Symposium on Dynamic Languages, DLS 2018, Boston, MA, USA, November 6, 2018***. ACM, 2018. doi: 10.1145/3276945 https://doi.org/10.1145/3276945.

Tim Felgentreff. **"Specifying Multi-Domain Constraints on Object-Behavior"**. In *Proceedings of the 7th Ph.d. Retreat of the HPI Research School on Service-Oriented Systems Engineering*. Tech. rep. 83. Hasso Plattner Institute, 2014.

Tim Felgentreff. **"The Design and Implementation of Object-Constraint Programming"**. PhD thesis, University of Potsdam, Germany, 2017 http://d-nb.info/1136085963.

Tim Felgentreff, Alan Borning, and Robert Hirschfeld. **"Babelsberg: Specifying and Solving Constraints on Object Behavior"**. Tech. rep. 2013-001. Viewpoints Research Institute, May 2013.

Tim Felgentreff, Alan Borning, and Robert Hirschfeld. **"Specifying and Solving Constraints on Object Behavior"**. *Journal of Object Technology (JOT)* 13, no. 4 (2014): 1–38. doi: 10.5381/jot.2014.13.4.a1 public/uni/FelgentreffJOT2014.pdf.

Tim Felgentreff, Alan Borning, Robert Hirschfeld, Jens Lincke, Yoshiki Ohshima, Bert Freudenberg, and Robert Krahn. **"Babelsberg/JS: A Browser-Based Implementation of an Object Constraint Language"**. In *ECOOP*, 411–36. Springer, 2014. doi: 10.1007/978-3-662-44202-9_17 public/uni/FelgentreffECOOP2014.pdf.

Tim Felgentreff, Robert Hirschfeld, Alan Borning, and Millstein Todd. **"Babelsberg/RML: Executable Semantics and Language Testing with RML"**. Tech. rep. 103. Hasso Plattner Institut, 2016.

Tim Felgentreff, Robert Hirschfeld, Maria Graber, Alan Borning, and Hidehiko Masuhara. **"Declaring Constraints on Object-Oriented Collections"**. *Journal of Information Processing* 24, no. 6 (2016): 917–27. doi: 10.2197/ipsjjip.24.917 public/uni/FelgentreffIPSJJIP2014.pdf.

Tim Felgentreff, Stefan Lehmann, Robert Hirschfeld, Sebastian Gerstenberg, Jakob Reschke, Lars Rückert, Patrick Siegler, Jan Graichen, Christian Nicolai, and Malte Swart. **"Automatically Selecting and Optimizing Constraint Solver Procedures for Object-Constraint Languages"**. In *Constrained and Reactive Objects Workshop (CROW)*, 65–72. MODULARITY Companion 2016. ACM, 2016. doi: 10.1145/2892664.2892671 public/uni/FelgentreffCROW2016.pdf.

Tim Felgentreff, Jens Lincke, Robert Hirschfeld, and Lauritz Thamsen. **"Lively Groups: Shared Behavior in a World of Objects Without Classes or Prototypes"**. In *Future Programming Workshop (FPW)*, 15–22. ACM, 2015. doi: 10.1145/2846656.2846659 public/uni/FelgentreffFPW2015.pdf.

Tim Felgentreff, Todd Millstein, and Alan Borning. **"Developing a Formal Semantics for Babelsberg: A Step-by-Step Approach"**. Tech. rep. 2014-002. Viewpoints Research Institute, September 2014.

Tim Felgentreff, Todd Millstein, Alan Borning, and Robert Hirschfeld. **"Checks and Balances — Constraint Solving Without Surprises in Object-Constraint Programming Languages: Full Formal Development"**. Tech. rep. 2015-001. Viewpoints Research Institute, 2015 public/uni/FelgentreffVPRI2015.pdf.

Tim Felgentreff, Todd Millstein, Alan Borning, and Robert Hirschfeld. **"Checks and Balances: Constraint Solving Without Surprises in Object-Constraint Programming Languages"**. In *Proceedings of the 2015 ACM International Conference on Object Oriented Programming Systems Languages & Applications*, 771–86. OOPSLA'15. ACM, 2015. doi: 10.1145/2814270.2814311 public/uni/FelgentreffOOPSLA2015.pdf.

Tim Felgentreff, Fabio Niephaus, Tobias Pape, and Robert Hirschfeld. **"When a Mouse Eats a Python: Smalltalk-style Development for Python and Ruby"**. In *Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs)*, 2017 public/uni/FelgentreffMoreVMs2017.pdf.

Tim Felgentreff, Tobias Pape, Robert Hirschfeld, Anton Gulenko, and Carl Friedrich Bolz. **"Language Independent Storage Strategies for Tracing JIT Based VMs"**. In *Proceedings of the 11th ACM Symposium on Dynamic Languages*, 119–28. DLS '15. ACM, 2015. doi: 10.1145/2816707.2816716 public/uni/PapeDLS2015.pdf.

Tim Felgentreff, Tobias Pape, Patrick Rein, and Robert Hirschfeld. **"How to Build a High-Performance VM for Squeak/Smalltalk in Your Spare Time: An Experience Report of Using the RPython Toolchain"**. In *Proceedings of the 11th Edition of the International Workshop on Smalltalk Technologies*, 21:1–10. IWST'16. ACM, 2016. doi: 10.1145/2991041.2991062. Best Paper Award public/uni/FelgentreffIWST2016.pdf.

Tim Felgentreff, Tobias Pape, Lars Wassermann, Robert Hirschfeld, and Carl Friedrich Bolz. **"Towards Reducing the Need for Algorithmic Primitives in Dynamic Language VMs Through a Tracing JIT"**. In *Proceedings of the 10th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems*, 7:1–10. ICOOOLPS'15. ACM, 2015. doi: 10.1145/2843915.2843924 public/uni/FelgentreffICOOOLPS2015.pdf.

Tim Felgentreff, Michael Perscheid, and Robert Hirschfeld. **"Constraining Timing-Dependent Communication for Debugging Non-Deterministic Failures"**. In *Proceedings of the Workshop on Academic Software Development Tools and Techniques*. WASDeTT'13, 2013 public/uni/FelgentreffWASDETT2013.pdf.

Tim Felgentreff, Michael Perscheid, and Robert Hirschfeld. **"Implementing Record and Refinement for Debugging Timing-dependent Communication"**. *Science of Computer Programming (SCICO)* 134 (2017): 4–18. doi: 10.1016/j.scico.2015.11.006 public/uni/FelgentreffSCICO2017.pdf.

Felgentreff, Tim, and Olivier Zendra, eds. ***Proceedings of the 13th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems, ICOOOLPS@ECOOP 2018, Amsterdam, Netherlands, July 16-21, 2018***. ACM, 2018. doi: 10.1145/3242947 https://doi.org/10.1145/3242947.

Bert Freudenberg, Dan H. H. Ingalls, Tim Felgentreff, Tobias Pape, and Robert Hirschfeld. **"SqueakJS: A Modern and Practical Smalltalk That Runs in Any Browser"**. In *Proceedings of the 10th ACM Symposium on Dynamic Languages*, 57–66. DLS '14. ACM, 2014. doi: 10.1145/2661088.2661100 public/uni/FreudenbergDLS2014.pdf.

Maria Graber, Tim Felgentreff, Robert Hirschfeld, and Alan Borning. **"Solving Interactive Logic Puzzles with Object-Constraints — an Experience Report Using Babelsberg/S for Squeak/Smalltalk"**. In *Workshop on Reactive and Event-Based Languages & Systems (REBLS)*, 2014 public/uni/GraberREBLS2014.pdf.

Johannes Henning, Tim Felgentreff, and Robert Hirschfeld. **"VM Wrapping: Fake It till You Make It"**. In *Proceedings of the 12th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages,*

Programs and Systems, ICOOOLPS@ECOOP 2017, Barcelona, Spain, June 19, 2017, 2:1–4, 2017. doi: 10.1145/3098572.3098576 https://doi.org/10.1145/3098572.3098576.

Johannes Henning, Tim Felgentreff, Fabio Niephaus, and Robert Hirschfeld. **"Toward Presizing and Pretransitioning Strategies for GraalPython"**. In *Conference Companion of the 4th International Conference on Art, Science, and Engineering of Programming*, 41–45. <Programming> '20. New York, NY, USA: Association for Computing Machinery, 2020. doi: 10.1145/3397537.3397564 https://doi.org/10.1145/3397537.3397564.

Eva-Maria Herbst, Fabian Maschler, Fabio Niephaus, Max Reimann, Julia Steier, Tim Felgentreff, Jens Lincke, Marcel Taeumel, Robert Hirschfeld, and Carsten Witt.
"ecoControl: Entwurf und Implementierung einer Software zur Optimierung heterogener Energiesysteme in Mehrfamilie
Tech. rep. 93. Hasso Plattner Institute, 2015.

Robert Hirschfeld, Hidehiko Masuhara, Atsushi Igarashi, and Tim Felgentreff. **"Visibility of Context-oriented Behavior and State in L"**. In *Proceedings of Japan Society for Software Science and Technology Annual Conference*. JSSST'14. Nagoya, Aichi-ken, Japan, 2014.

Robert Hirschfeld, Hidehiko Masuhara, Atsushi Igarashi, and Tim Felgentreff. **"Visibility of Context-Oriented Behavior and State in L"**. *Journal of the Japan Society for Software Science and Technology (JJSSST)* 32, no. 3 (2015): 149–59 public/uni/HirschfeldJJSSST2014.pdf.

Daniel Ingalls, Tim Felgentreff, Robert Hirschfeld, Robert Krahn, Jens Lincke, Marko Röder, Antero Taivalsaari, and Tommi Mikkonen. **"A World of Active Objects for Work and Play: The First Ten Years of Lively"**. In *Proceedings of the 2016 ACM International Symposium on New Ideas, New Paradigms, and Reflections on Programming and Software*, 238–49. Onward! 2016. ACM, 2016. doi: 10.1145/2986012.2986029 public/uni/IngallsONWARD2016.pdf.

Bastian Kruck, Stefan Lehmann, Christoph Kessler, Jakob Reschke, Tim Felgentreff, Jens Lincke, and Robert Hirschfeld. **"Multi-Level Debugging for Interpreter Developers"**. In *Workshop on Language Modularity a La Mode (LaMOD)*, 91–93. MODULARITY Companion 2016. ACM, 2016. doi: 10.1145/2892664.2892679 public/uni/KruckLAMOD2016.pdf.

Bastian Kruck, Tobias Pape, Tim Felgentreff, and Robert Hirschfeld. **"Crossing Abstraction Barriers when Debugging in Dynamic Languages"**. In *Proceedings of the Symposium on Applied Computing*, 1498–1504. SAC'17. ACM, 2017. doi: 10.1145/3019612.3019734 public/uni/KruckSAC2017.pdf.

Stefan Lehmann, Tim Felgentreff, and Robert Hirschfeld. **"Connecting Object Constraints with Context-Oriented Programming: Scoping Constraints with Layers and Activating Layers with Constraints"**. In *Proceedings of the 7th International Workshop on Context-Oriented Programming*, 1–6. COP'15. ACM, 2015. doi: 10.1145/2786545.2786549 public/uni/LehmannCOP2015.pdf.

Stefan Lehmann, Tim Felgentreff, Jens Lincke, Patrick Rein, and Robert Hirschfeld. **"Reactive Object Queries"**. In *Constrained and Reactive Objects Workshop (CROW)*, 23–28. MODULARITY Companion 2016. ACM, 2016. doi: 10.1145/2892664.2892665 public/uni/LehmannCROW2016.pdf.

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● timfelgentreff ● timfel ● timfelgentreff ●