

Jahresbericht 2020

Fachgebiet Software-Architekturen

Prof. Dr. Robert Hirschfeld



Hasso-Plattner-Institut
Digital-Engineering-Fakultät
Universität Potsdam

Jahresbericht 2020

Fachgebiet Software-Architekturen

Prof. Dr. Robert Hirschfeld

<https://www.hpi.uni-potsdam.de/swa>

28. Februar 2021

Inhaltsverzeichnis

| | |
|--|-----------|
| 1 Personelle Zusammensetzung | 2 |
| 2 Lehrveranstaltungen | 5 |
| 3 Promotionsvorhaben | 7 |
| 4 Abschlussarbeiten | 8 |
| 5 Master- und Bachelorprojekte | 10 |
| 6 Bearbeitete Forschungsthemen | 12 |
| 7 Veröffentlichungen | 13 |
| 8 Vorträge auf Tagungen | 17 |
| 9 Organisation von und Teilnahme an HPI-Workshops | 19 |
| 10 Vorträge von Gästen des Fachgebiets | 20 |
| 11 Partner | 22 |
| 12 Open-Source-Projekte | 25 |
| 13 Drittmittelprojekte | 30 |
| 14 Mitarbeit in Programmkomitees | 32 |
| 15 Begutachtungen und Gremientätigkeiten | 34 |
| 16 Tagungsorganisation | 36 |
| 17 Herausgeberschaft | 38 |
| 18 Mitgliedschaften | 40 |
| 19 Auszeichnungen | 41 |
| 20 Sonstiges | 42 |

1 Personelle Zusammensetzung

Leiter des Fachgebiets

Prof. Dr. Robert Hirschfeld
robert.hirschfeld@hpi.uni-potsdam.de
(0331) 5509-541

Assistentin der Arbeitsgruppe

Sabine Wagner
sabine.wagner@hpi.uni-potsdam.de
(0331) 5509-220

Mitarbeiter und Doktoranden

Dr. Jens Lincke
jens.lincke@hpi.uni-potsdam.de
(0331) 5509-544

Dr. Tobias Pape
tobias.pape@hpi.uni-potsdam.de
(0331) 5509-276

Dr. Marcel Taeumel
marcel.taeumel@hpi.uni-potsdam.de
(0331) 5509-151

Tom Beckmann, M.Sc. (seit August 2020)
tom.beckmann@hpi.uni-potsdam.de
(0331) 5509-545

Johannes Henning, M.Sc. (bis Juni 2020)
johannes.henning@hpi.uni-potsdam.de
(0331) 5509-275

Toni Mattis, M.Sc.
toni.mattis@hpi.uni-potsdam.de
(0331) 5509-204

Eliot Miranda
eliot.miranda@gmail.com
(0331) 5509-151

Fabio Niephaus, M.Sc.
fabio.niephaus@hpi.uni-potsdam.de
(0331) 5509-3928

Stefan Ramson, M.Sc.
stefan.ramson@hpi.uni-potsdam.de
(0331) 5509-217

Patrick Rein, M.Sc.
patrick.rein@hpi.uni-potsdam.de
(0331) 5509-279

Dipl.-Inf. Marcel Weiher (extern)
marcel.weiher@hpi.uni-potsdam.de
(0331) 5509-217

Gastwissenschaftlerinnen und Gastwissenschaftler

Prof. Dr. Harumi Watanabe (Forschungsfreisemester)
Tokai University, Tokio, Japan
harumi-w@tsc.u-tokai.ac.jp
(0331) 5509-545

Dr. Carl Friedrich Bolz-Tereick
Heinrich-Heine-Universität Düsseldorf
cfbolz@gmx.de

Dr. Tim Felgentreff
Oracle Labs, Potsdam, Germany
tim.felgentreff@hpi.uni-potsdam.de
(0331) 5509-543

Richard P. Gabriel, Ph.D.
Dreamsongs, Redwood City, California, USA
rpg@dreamsongs.com

Tutorinnen, Tutoren und studentische Hilfskräfte

Tarik Alnawa
Tom Beckmann
Leon Bein
Joana Bergsiek
Tom Braun
Tim Garrels
Henrik Guhl
Theresa Hradilak
Paula Klinke
Eva Krebs
Stephan Lutz
Leon Matthes
Paul Methfessel
Luc Prestin
Felix Roth
Ole Schlüter
Klara Seitz
Christoph Thiede
Clemens Tiedt
Silvan Verhoeven
Kira Weinlein
Tobias Zagorni

Schülerpraktikanten

Richard Witt
Gymnasium "Am Lindenberg" Ilmenau, Thüringen
Automatisierter Vergleich wissenschaftlicher Bibliografien

2 Lehrveranstaltungen

Wintersemester 2020/2021 (16 SWS)

Introduction to Programming Technology 1 (4 SWS, Vorlesung, Bachelor)

Robert Hirschfeld, Tom Beckmann, Toni Mattis, Tobias Pape

Programming Language Concepts, Tools, and Environments (4 SWS, Projektseminar, Master)

Robert Hirschfeld, Marcel Taeumel, Toni Mattis, Patrick Rein, Fabio Niephaus, Jens Lincke, Stefan Ramson

Software Architecture (4 SWS, Vorlesung, Bachelor)

Robert Hirschfeld, Patrick Rein, Marcel Taeumel, Jens Lincke, Fabio Niephaus, Stefan Ramson

Graduate School Research Seminar (2 SWS, Forschungskolleg)

Andreas Polze, Robert Hirschfeld

Tool Support for Collaborative Creation of Interactive Storytelling Media (2 SWS, Bachelorprojekt)

Robert Hirschfeld, Jens Lincke, Patrick Rein, Stefan Ramson, Marcel Taeumel

Sommersemester 2020 (22 SWS)

Code Repository Mining (4 SWS, Projektseminar, Master)

Robert Hirschfeld, Toni Mattis, Jens Lincke, Stefan Ramson, Tobias Pape

End-user Development (4 SWS, Projektseminar, Master)

Robert Hirschfeld, Jens Lincke, Stefan Ramson

Software engineering 1 (4 SWS, Vorlesung, Bachelor)

Robert Hirschfeld, Patrick Rein, Marcel Taeumel, Jens Lincke, Toni Mattis, Stefan Ramson, Tobias Pape, Fabio Niephaus

Polyglot Programming (4 SWS, Projektseminar, Master)

Robert Hirschfeld, Fabio Niephaus, Tim Felgentreff

2 Lehrveranstaltungen

Graduate School Research Seminar (2 SWS, Forschungskolleg)
Andreas Polze, Robert Hirschfeld

Hardware Acceleration for Interactive, High-quality Graphics in Live Programming Environments (2 SWS, Masterprojekt)
Robert Hirschfeld, Marcel Taeumel, Tom Beckmann

Exploring Provenance Through Programming (2 SWS, Bachelorprojekt)
Robert Hirschfeld, Jens Lincke, Patrick Rein

Wintersemester 2019/2020 (18 SWS)

Programming Experience (4 SWS, Projektseminar, Master)
Robert Hirschfeld, Jens Lincke, Fabio Niephaus, Patrick Rein

Reactive Programming (4 SWS, Projektseminar, Master)
Robert Hirschfeld, Stefan Ramson, Marcel Taeumel

Software Architecture (4 SWS, Vorlesung, Bachelor)
Robert Hirschfeld, Patrick Rein, Marcel Taeumel, Jens Lincke, Stefan Ramson, Toni Mattis, Fabio Niephaus, Tobias Pape, Johannes Henning

Graduate School Research Seminar (2 SWS, Forschungskolleg)
Andreas Polze, Robert Hirschfeld

Software Development Tools for Polyglot Programming (2 SWS, Masterprojekt)
Robert Hirschfeld, Fabio Niephaus, Tim Felgentreff

Exploring Provenance Through Programming (2 SWS, Bachelorprojekt)
Robert Hirschfeld, Jens Lincke, Patrick Rein

3 Promotionsvorhaben

Abgeschlossene Promotionsvorhaben

Tobias Pape
Efficient Compound Values in Virtual Machines

Marcel Taeumel
Data-driven Tool Construction in Exploratory Programming Environments

Laufende Promotionsvorhaben

Tom Beckmann
Tool Integration in Development Environments

Johannes Henning
Programming Language and Runtime Support for Database Analytics

Toni Mattis
Supporting Program Comprehension Through Semantic Code Models

Eliot Miranda
Register Allocation in the Context of Sista/Scorch

Fabio Niephaus
Live Multi-language Development and Run-time Environments

Stefan Ramson
Active Expressions as a Basic Building Block for Reactive Programming Concepts

Patrick Rein
Language Exploration and Development Environments

Marcel Weiher (extern)
Linguistic Architectural Support for Interactive Software

4 Abschlussarbeiten

Masterarbeiten

Tom Beckmann

Sandblocks: Design and Implementation of a Projectional, Live Programming Environment Using a Block-based User Interface

Betreuer: Robert Hirschfeld, Patrick Rein

Alexander Johann Markus Meißner

Design, Implementation and Evaluation of Reified Version-Control in an In-Memory Graph-Database

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Klara Seitz

Language and Tool Support for 3D Crochet Patterns: Virtual Crochet With a Graph Structure

Betreuer: Robert Hirschfeld, Jens Lincke

Alexander Riese

User-defined Interface Mappings for Polyglot Runtime Environments

Betreuer: Robert Hirschfeld, Fabio Niephaus

Bachelorarbeiten

Lara Pfennigschmidt

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Introduction to the Domain and Specific Challenges of Visualizing Demographic Data and Personal Opinions

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Wanda Baltzer

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Concepts for Visualizations That Make Data Explorable and the Exploration and Categorization of the Design Space

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Theresa Hradilak

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Implementation and Integration Into an Environment of Explorable Visualization Tools

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Simon Stadlinger

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Using the Lively4 Platform With its Active Content Capabilities to Conduct a Research-oriented Software Project

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Luc Maurice Prestin

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Mapping of Data and UI for Interactive and Explorable Visualizations

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Moritz Spranger

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Evaluating Visualization Technologies to Display, Animate, and Explore Individual Data Points of High-dimensional Data Sets in Lively4

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

Leo Wendt

An Individual-Centered Approach to Visualize People's Opinions and Demographic Information | Visualizing Africa's Voices: Evaluating Our Individual-centered Approach to Visualize People's Opinions and Demographic Data

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein

5 Master- und Bachelorprojekte

Masterprojekt 2020

Hardware Acceleration for Interactive, High-quality Graphics in Live Programming Environments

In this project, students will explore the design space of hardware-supported 2D rendering in direct-manipulation, live-programming systems using the Squeak/Smalltalk system with Morpheus as graphics framework. The following goals form the starting point for this project and are likely to be refined and extended: explore interdependencies between tools for live programming and mechanisms for hardware acceleration. Document the opportunities and limitations of that boundary. Consider the environment's capabilities for direct manipulation, exploration, and liveness; design and implement a concept of layers and layer composition as an extension to Squeak's (and Morpheus's) canvas-based drawing abstraction; implement and evaluate (at least) three exemplary compositors (for layers) to integrate hardware-specific features for improving Squeak's rendering quality and performance: CPU-based, OpenGL-ES-based, and Metal-based.

Teilnehmer: Stephan Lutz, Stefan Reschke, Tobias Zagorni
Betreuer: Robert Hirschfeld, Marcel Taeumel, Tom Beckmann

Masterprojekt 2019/2020

Software Development Tools for Polyglot Programming.

Polyglot programming is the practice of writing code in multiple programming languages, which gives software engineers a much broader choice in terms of software libraries and frameworks they can use for building applications. In this project, we will explore the domain of polyglot programming with focus on the programming experience. In particular, we will design and build software development tools that support developers in writing polyglot applications. For this, we will use GraalVM and TruffleSqueak. Students should be familiar with Smalltalk and at least one of the following programming languages: C, C++, Java, JavaScript, Python, R, Ruby (in alphabetical order).

Teilnehmer: Nico Scordialo, Bastian König, Jonas Hering, Jakob Edding, Kolya Opahle
Betreuer: Robert Hirschfeld, Fabio Niephaus, Patrick Rein, Tim Felgentreff

Bachelorprojekt 2020/2021

Tool Support for Collaborative Creation of Interactive Storytelling Media

In this project, students will develop live tools and frameworks for cross-functional teams creating interactive storytelling content for the web, such as explorable explanations or scrollytelling. The resulting collaborative authoring tools will bring the perspectives of programmers, designers, and customers together in a single, web-based environment. Part of the project will be: explore means for end-user programming of interactive applications and animations; design and implement a framework for expressing time- and scroll-position-dependent behavior in JavaScript supporting scrollytelling; design and implement an interactive editor in lively.next to author the structure, content, animations, and code of scrollytelling content; explore and understand the design process and communication patterns in teams creating interactive content; design and implement tools in lively.next to enable all design participants to review and discuss an interactive content directly from within the interactive.

Partner: Doreen Stahr, Robin Schreiber (Typeshift, Potsdam, Germany)

Teilnehmer: Tarik Alnawa, Linus Hagemann, Paula Klinke, Felix Roth, Silvan Verhoeven

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein, Marcel Taeumel, Stefan Ramson

Bachelorprojekt 2019/2020

Exploring Provenance Through Programming: Incorporating Data Provenance Into Heterogeneous Data Visualizations in the Context of Africa's Voices Foundation.

In this project, students will explore how the provenance of data can be made explorable in visualizations for data of the Africa's Voices Foundation (AVF) to support decision making beyond pre-figured questions. Therefore, the students will build a platform that supports new and unforeseen visualizations of data to be built, as well as constructing several examples: explore means for exploring the provenance of parts of visualizations; implement a domain model for working with the AVF provenance data; design and implement means to support programming visualizations which allow the exploration of data provenance; design and implement means to use components developed from within Lively 4 independently; design and Implement example interactive visualizations based on data from AVF.

Partner: Luke Church (Africa's Voices Foundation, Cambridge, U.K.)

Teilnehmer: Wanda Baltzer, Theresa Hradilak, Lara Pfennigsschmidt, Luc Prestin, Moritz Spranger, Simon Stadlinger, Leo Wendt

Betreuer: Robert Hirschfeld, Jens Lincke, Patrick Rein, Marcel Taeumel, Toni Mattis, Stefan Ramson

6 Bearbeitete Forschungsthemen

Forschungsthemen

Software Modularity
Context-oriented Programming
Meta-level Architectures
Exploratory Programming
Live Programming
Babylonian Programming
Programming Languages
Polyglot Programming
Reactive Programming
Block-based Programming Environments
Virtual Machines and Execution Environments
Code Repository Mining
Statistical Code Repository Analysis and Machine Learning

Anwendungsbereiche

Education
End-user Development
Programming Environments and Tool Support
Design Thinking for Programming Activities
Cloud Programming Environments
Personal Productivity Programming

Technologien

Squeak/Smalltalk
LivelyKernel, JavaScript
Vivide, VivideJS
TruffleSqueak, GraalVM/Truffle, LSP, VS Code
RSqueak, PyPy
Gramada, Ohm
Babelsberg
Sandblocks
Home

7 Veröffentlichungen

Zeitschriften und Konferenzen (begutachtet)

Fabio Niephaus, Patrick Rein, Jakob Edding, Jonas Hering, Bastian König, Kolya Opahle, Nico Scordialo, and Robert Hirschfeld. *Example-based Live Programming for Everyone: Building Language-agnostic Tools for Live Programming With LSP and GraalVM*. In Proceedings of the ACM Symposium for New Ideas, New Paradigms, and Reflections on Everything to do with Programming and Software (Onward!) 2020, co-located with the Conference on Object-oriented Programming, Systems, Languages, and Applications (OOPSLA), pages 108-124, Chicago, United States, November 17-18, 2020, ACM DL.

Toni Mattis and Robert Hirschfeld. *Lightweight Lexical Test Prioritization for Immediate Feedback*. In Journal on The Art, Science, and Engineering of Programming, vol. 4, no. 3, art. 12, 32 pages, 2020, AOSA.

Toni Mattis, Patrick Rein, Falco Dürsch, and Robert Hirschfeld. *RTPTorrent: An Open-source Dataset for Evaluating Regression Test Prioritization*. In Proceedings of the Virtual Conference on Mining Software Repositories (MSR) 2020, pages 385-396, Yongsan-gu, Seoul, South Korea, May 25-26, 2020, IEEE.

Workshops (begutachtet)

Stefan Ramson, Jens Lincke, Harumi Watanabe, and Robert Hirschfeld. *Zone-based Layer Activation: Context-specific Behavior Adaptations Across Logically-connected Asynchronous Operations*. In Proceedings of the Virtual Workshop on Context-oriented Programming (COP) 2020, co-located with the European Conference on Object-oriented Programming (ECOOP), 10 pages, Berlin, Germany, July 21, 2020, ACM DL.

Toni Mattis, Patrick Rein, and Robert Hirschfeld. *Three Trillion Lines: Infrastructure for Mining GitHub in the Classroom*. In Proceedings of the Virtual First International Workshop on ENgineering Intelligent Applications' Code 2020 (ENIAC20), companion volume to the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), pages 1-6, Porto, Portugal, March 24, 2020, ACM DL.

Alexander Riese, Fabio Niephaus, Tim Felgentreff, and Robert Hirschfeld. *User-defined Interface Mappings for the GraalVM*. In Proceedings of the Virtual Interconnecting Code Workshop (ICW) 2020, companion volume to the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), pages 19-22, Porto, Portugal, March 23, 2020, ACM DL.

Johannes Henning, Tim Felgentreff, Fabio Niephaus, and Robert Hirschfeld. *Toward Presizing and Pretransitioning Strategies for GraalPython*. In Proceedings of the Virtual Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs) 2020, companion volume to the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), pages 41-45, Porto, Portugal, March 24, 2020, ACM DL.

Tom Beckmann, Stefan Ramson, Patrick Rein, and Robert Hirschfeld. *Visual Design for a Tree-oriented Projectional Editor*. In Proceedings of the Virtual Programming Experience 2020 (PX/20) Workshop, companion volume to the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), pages 113-119, Porto, Portugal, March 23, 2020, ACM DL.

Jan Ehmueller, Alexander Riese, Hendrik Tjabben, Fabio Niephaus, and Robert Hirschfeld. *Polyglot Code Finder*. In Proceedings of the Virtual Programming Experience 2020 (PX/20) Workshop, companion volume to the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), pages 106-112, Porto, Portugal, March 23, 2020, ACM DL.

Marcel Weiher. *Can Programmers Escape the Gentle Tyranny of call/return?*. In Proceedings of the Virtual Convivial Computing Salon 2020 Workshop, companion volume to the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), pages 163-172, Porto, Portugal, May 3-9, 2020, ACM DL.

Monografien (begutachtet)

Marcel Taeumel. *Data-driven Tool Construction in Exploratory Programming Environments*. Doctoral Dissertation, 2020, Hasso Plattner Institute and University of Potsdam.

Tobias Pape. *Efficient Compound Values in Virtual Machines*. Hasso Plattner Institute and University of Potsdam. (to appear)

Bücher

Andrew P. Black, Oscar Nierstrasz, Damien Cassou, Stéphane Ducasse, Damien Pollet, Marcus Denker, Christoph Thiede, and Patrick Rein. *Squeak by Example (5.3)*. 2020.

Technische Berichte

Leon Bein, Tom Braun, Björn Daase, Elina Emsbach, Leon Matthes, Maximilian Stiede, Marcel Taeumel, Toni Mattis, Stefan Ramson, Patrick Rein, Robert Hirschfeld, and Jens Mönig. *SandBlocks: Integration visueller und textueller Elemente in Live-Programmiersysteme*. HPI Technical Reports, vol. 132, 2020, Hasso Plattner Institute.

Christoph Meinel, Hasso Plattner, Jürgen Döllner, Mathias Weske, Andreas Polze, Robert Hirschfeld, Felix Naumann, Holger Giese, and Patrick Baudisch, Tobias Friedrich, Erwin Böttinger, and Christoph Lippert (eds.). *Fall Retreat 2018*. HPI Technical Reports, vol. 129, 2019, Hasso Plattner Institute.

Sonstiges

Robert Hirschfeld and Tobias Pape (eds.). *Proceedings of the 34th European Conference on Object-Oriented Programming (ECOOP) 2020*. Leibniz International Proceedings in Informatics (LIPIcs), vol. 166, pages 0:i-0:xxviii, Dagstuhl, Germany, 2020, AITO.

Robert Hirschfeld (ed.). *Selected Papers from the 2020 European Conference on Object-Oriented Programming*. Elsevier Science of Computer Programming (SCICO) Special Issue, vol. 197, October 1, 2020, SCICO.

Stefan Ramson, Tom Braun, Gabriela Pipa, and Toni Mattis (eds.). *Proceedings of the 2020 Joint Workshop of the German Research Training Groups in Computer Science*. Dagstuhl, June 8-9, 2020, DFG.

7 Veröffentlichungen

Paul Leger, Jens Lincke, Robert Hirschfeld, Atsushi Igarashi, and Hidehiko Masuhara. *COP-20 (Chairs' Welcome)*. In Proceedings of the Workshop on Context-Oriented Programming and Advanced Modularity (COP) 2020, co-located with the European Conference on Object-oriented Programming (ECOOP), Amsterdam, July 21, 2020, ACM DL.

Fachgebiet Software-Architekturen. *Jahresbericht 2019*. Hasso-Plattner-Institut, Digital-Engineering-Fakultät, Universität Potsdam, 2020.

8 Vorträge auf Tagungen

Fabio Niephaus, Patrick Rein, Jakob Edding, Jonas Hering, Bastian König, Kolya Opahle, Nico Scordialo, and Robert Hirschfeld. *Example-based Live Programming for Everyone: Building Language-agnostic Tools for Live Programming With LSP and GraalVM*. ACM Symposium for New Ideas, New Paradigms, and Reflections on Everything to do with Programming and Software (Onward!) 2020, co-located with the Conference on Object-oriented Programming, Systems, Languages, and Applications (OOPSLA), Chicago, United States, November 17-18, 2020, ACM. (virtuell)

Marcel Taeumel. *Exploratory Program Design: Supporting Creativity Challenges Through Agile Methods and Design Thinking*. Invited talk for the Robot Challenge, co-located with the Asia Pacific Conference on Robot IoT System Development and Platform (APRIS) 2020, November 11-15, 2020. (virtuell)

Fabio Niephaus. *Live Programming with GraalVM*. Virtual Machine Meetup, co-located with the 17th International Conference on Managed Programming Languages & Runtimes (MPLR'20), November 5, 2020. (virtuell)

Stefan Ramson, Jens Lincke, Harumi Watanabe, and Robert Hirschfeld. *Zone-based Layer Activation: Context-specific Behavior Adaptations Across Logically-connected Asynchronous Operations*. Workshop on Context-oriented Programming (COP) 2020, co-located with the European Conference on Object-oriented Programming (ECOOP), Berlin, Germany, July 21, 2020, ACM. (virtuell)

Toni Mattis, Patrick Rein, Falco Dürsch, and Robert Hirschfeld. *RTPTorrent: An Open-source Dataset for Evaluating Regression Test Prioritization*. Conference on Mining Software Repositories (MSR) 2020, Yongsan-gu, Seoul, South Korea, May 25-26, 2020, IEEE. (virtuell)

Toni Mattis, Patrick Rein, and Robert Hirschfeld. *Three Trillion Lines: Infrastructure for Mining GitHub in the Classroom*. First International Workshop on ENgineering Intelligent Applications' Code 2020 (ENIAC20), co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, March 24, 2020, ACM. (virtuell)

Alexander Riese, **Fabio Niephaus**, Tim Felgentreff, and Robert Hirschfeld. *User-defined Interface Mappings for the GraalVM*. Interconnecting Code Workshop (ICW) 2020, co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, March 23, 2020, ACM. (virtuell)

Johannes Henning, Tim Felgentreff, **Fabio Niephaus**, and Robert Hirschfeld. *Toward Presizing and Pretransitioning Strategies for GraalPython*. Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs) 2020, co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, March 24, 2020, ACM. (virtuell)

Tom Beckmann, Stefan Ramson, Patrick Rein, and Robert Hirschfeld. *Visual Design for a Tree-oriented Projectional Editor*. Programming Experience 2020 (PX/20) Workshop, co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, March 23, 2020, ACM. (virtuell)

Jan Ehmüller, Alexander Riese, Hendrik Tjabben, Fabio Niephaus, and Robert Hirschfeld. *Polyglot Code Finder*. Programming Experience 2020 (PX/20) Workshop, co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, March 23, 2020, ACM. (virtuell)

Marcel Weiher. *Can Programmers Escape the Gentle Tyranny of call/return?*. Convivial Computing Salon 2020 Workshop, co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, May 3-9, 2020, ACM.

9 Organisation von und Teilnahme an HPI-Workshops

Fall Retreat of the HPI Research Schools

2020-10-26..28

Potsdam, Germany (virtuell)

HPI-Stanford Design Thinking Research Workshop

2020-09-08..10

Potsdam, Germany (virtuell)

Gemeinsamer Workshop der Graduiertenkollegs

2020-06-07..10

Schloss Dagstuhl, Germany (virtuell)

HPI-Stanford Design Thinking Research Workshop

2020-04-15..17

Stanford, California, USA (virtuell)

10 Vorträge von Gästen des Fachgebiets

Tom Beckmann (Software Architecture Group, HPI)

Efficient Block-based Programming Interfaces to Support Integrated Tooling

HPI – Tokyo Tech Joint Research Seminar

2020-12-18

Yudai Tanabe (Programming Research Group, Tokyo Institute of Technology, Japan)

Programming with Versions: Towards a Per-expression Dependency Analysis

HPI – Tokyo Tech Joint Research Seminar

2020-11-13

Lin Zhou (Digital Health Center, HPI)

Gait Analysis

2020-10-02

Justin Albert (Digital Health Center, HPI)

Gait Analysis

2020-09-18

Dr. Vanessa Freudenberg (croquet.io, USA)

croquet.io

2020-08-20

Dr. Michael Perscheid (SAP ICP)

Low Code

2020-08-14

Yusuke Izawa (Programming Research Group, Tokyo Institute of Technology, Japan)

Amalgamating Different JIT Compilations in a Meta-tracing JIT Compiler Framework

HPI – Tokyo Tech Joint Research Seminar

2020-07-31

Marcel Taeumel (Software Architecture Group, HPI)

Live and Exploratory Programming in Squeak/Smalltalk

HPI – Tokyo Tech Joint Research Seminar

2020-07-03

Rohan Sobha (Programming Research Group, Tokyo Institute of Technology, Japan)
The Effects of Domain Expertise on A User's Conversational Search
HPI – Tokyo Tech Joint Research Seminar
2020-06-19

Jens Lincke (Software Architecture Group, HPI)
An Overview of Lively4
HPI – Tokyo Tech Joint Research Seminar
2020-06-05

Prof. Dr. Harumi Watanabe (Tokai University, Tokyo, Japan / Software Architecture Group, HPI)
Embedded COP for IoT
2020-07-03

11 Partner

Africa's Voices Foundation
<https://www.africasvoices.org>

Bedarra Research Labs, Ottawa, Ontario, Canada
<http://www.bedarra.org>

DOCOMO Euro-Labs, Munich, Germany
<http://www.docomoeurolabs.de>

Dreamsongs, Redwood City, California, USA
<https://www.dreamsongs.com>

eXXcelent solutions, Ulm, Germany
<http://www.exxcelent.de>

GemTalk Systems, Beaverton, Oregon, USA
<http://www.gemtalksystems.com>

graphicore, Fürth, Germany
<http://www.graphicore.de>

HARC, Y Combinator Research, San Francisco, California, USA
<https://harc.ycr.org/member>

impara, Magdeburg, Germany
<http://www.impara.de>

Industrial Design Institute, Magdeburg, Germany
<http://www.gestaltung.hs-magdeburg.de>

Instantiations, Raleigh, North Carolina, USA
<https://www.instantiations.com>

Kyoto University, 京都大学, Kyoto, Japan
<http://www.kyoto-u.ac.jp>, <http://www.sato.kuis.kyoto-u.ac.jp>

Kyushu University, 九州大学, Fukuoka, Japan
<https://www.kyushu-u.ac.jp>

Oracle Labs Potsdam, Germany
<https://labs.oracle.com>

Oracle Labs Redwood Shores, CA, USA
<https://labs.oracle.com>

Oracle Labs Zurich, Switzerland
<https://labs.oracle.com>

SAP Innovation Center, Potsdam, Germany
<https://icn.sap.com>

SAP Knowledge and Education, Walldorf, Germany
<https://www.sap.com>

SAP Palo Alto Research Center, Palo Alto, California, USA
<https://www.sap.com>

SEC-i SmartEnergy Control Initiative, Ilmenau, Germany
<http://www.sec-i.org>

Stanford University, Center for Design Research, Palo Alto, California, USA
<http://www-cdr.stanford.edu>

Steinmayr Net Intelligence, Bergisch Gladbach, Germany
<http://www.steinmayr.de>

Sun Microsystems Laboratories, Menlo Park, California, USA
<http://research.sun.com>

Technische Universität Darmstadt, Darmstadt, Germany
<http://www.stg.tu-darmstadt.de>

Teleplace, Redwood City, California, USA
<http://www.teleplace.com>

The University of Tokyo, 東京大学, Tokyo, Japan
<http://www.u-tokyo.ac.jp>, <https://www.csg.ci.i.u-tokyo.ac.jp>

Tokai University, 東海大学, Tokyo, Japan
<https://www.u-tokai.ac.jp>

Tokyo Institute of Technology, 東京工業大学, Tokyo, Japan
<https://www.titech.ac.jp>, <https://prg.is.titech.ac.jp>

Travis CI, Berlin, Germany
<https://travis-ci.com>

Typeshift, Potsdam, Germany
<https://typeshift.de>

University of Antwerp, Antwerp, Belgium
<http://www.win.ua.ac.be>

University of Bern, Bern, Switzerland
<https://www.iam.unibe.ch/~scg>

University of Koblenz-Landau, Koblenz, Germany
<http://softlang.wikidot.com>

Viewpoints Research Institute, Glendale, California, USA
<http://www.vpri.org>

Vrije Universiteit Brussel, Brussels, Belgium
<https://soft.vub.ac.be>

VMware R&D, GemStone Systems, Beaverton, Oregon, USA
<http://www.gemstone.com>

Windward Solutions, Los Altos, California, USA
<http://www.windwardsolutions.com>

12 Open-Source-Projekte

Eigene Projekte

Lively4

A self-supporting web-based development environment that transfers Lively Kernel's live programming experience to newest web technology. By integrating Smalltalk-like tool support with Web Components and cloud storages, Lively4 encourages an exploratory style of programming and wiki-inspired collaboration between students.

<https://lively-kernel.org/lively4/lively4-core/start.html>

<https://github.com/LivelyKernel/lively4-core>

Vivide/VivideJS

A Squeak/Smalltalk-based programming environment and framework that supports low-effort construction of graphical tools by employing a data-driven perspective and a script-based programming model.

<https://github.com/hpi-swa/vivide>

<https://github.com/LivelyKernel/lively4-core/tree/gh-pages/src/client/vivide>

Squot and Squit

An object tracker for Squeak/Smalltalk allowing version control of arbitrary objects (Squot) with support for a Git backend (Squit) written Smalltalk.

<https://github.com/hpi-swa/Squot>

Polyglot Live Programming Support in Visual Studio Code

A Visual Studio Code extension that allows developers to use example-based live programming across multiple languages supported by the GraalVM.

<https://github.com/hpi-swa/polyglot-live-programming>

Ohm/S

A Squeak/Smalltalk implementation of the metaprogramming parser-generator framework Ohm.

<https://github.com/hpi-swa/Ohm-S>

Gramada

An interactive development environment for programming languages defined in Ohm. It is based on Vivide and implemented in Squeak/Smalltalk.

<https://github.com/hpi-swa/Gramada>

TruffleSqueak

A Squeak/Smalltalk virtual machine and polyglot programming environment for the GraalVM.

<https://github.com/hpi-swa/trufflesqueak>

Home Desktop System

A live, object-centric desktop system built on top of Squeak/Smalltalk. It is based upon the idea of representing data as living objects and allowing its users to adapt it to their needs without any restrictions.

<https://github.com/hpi-swa-lab/home-desktop-system/>

Animations

An extension for Squeak/Smalltalk that employs a simple programming model for adding animations to the Morphic framework.

<https://github.com/hpi-swa/animations>

Widgets

A set of graphical controls such as tree views, lists views, and buttons implemented in Squeak/Smalltalk using the Signals observer pattern.

<https://github.com/hpi-swa/widgets>

GlyphHub

Creating fonts is a complex task that requires expert knowledge in a variety of domains. GlyphHub is a platform that aims to enhance the means of communication by integrating complex font rendering and editing in a live environment, including an approach to generate code based on users' live edits.

<https://github.com/hpi-swa-lab/GlyphHub>

SandBlocks

An approach to combine both textual and visual elements in a shared programming system. Developers can rely on the familiar textual representation of source code but also leverage the programming experience with a visual language as needed.

<https://github.com/hpi-swa-lab/SandBlocks>

smalltalkCI

A framework for testing Smalltalk projects written in Squeak/Smalltalk, GemStone, and Pharo on Linux, macOS, and Windows. It provides support for Smalltalk on Travis CI and can be used with GitHub Actions, GitLab CI, AppVeyor, and other CI infrastructures.

<https://github.com/hpi-swa/smalltalkCI>

<https://docs.travis-ci.com/user/languages/smalltalk>

RSqueak/VM

A Squeak/Smalltalk virtual machine written in the language implementation framework RPython that allows for various research experiments such as performance optimizations and language compositions.

<https://github.com/hpi-swa/RSqueak>

Babelsberg

A formal design of Object-Constraint Programming with multiple implementations for object-constraint programming to integrate constraint declaration and continuous satisfaction with mutable object-oriented structures and behavior.

<https://github.com/babelsberg>

Theseus

A prototype for adaptive just-in-time data structure optimization with compound values. <https://github.com/shiplift/theseus>

ContextJS

Context-oriented programming provides dedicated support for defining and composing variations to a basic program behavior. ContextJS implements context-oriented programming for JavaScript and introduces language abstractions to define a variety of scopes to dynamically adapt behavior variations at runtime.

<https://github.com/LivelyKernel/ContextJS>

<https://www.npmjs.com/package/contextjs>

SqueakJS

Executes Squeak in a web page without a plugin. It is a fully capable virtual machine implemented in pure JavaScript running unmodified Squeak images. Squeak is a modern implementation of Smalltalk, the original dynamic object-oriented programming environment. It runs bit-identically on virtually any platform, and now in the web browser, too.

<https://github.com/bertfreudenberg/SqueakJS>

<https://squeak.js.org>

Lively Web

A browser-based runtime and development environment with live capabilities allowing to inspect and change applications and the system while it is running. Developers share applications and tools they created in Lively Web through an instance-based publication mechanism.

<https://lively-web.org/welcome.html>

<https://github.com/LivelyKernel/LivelyKernel>

Matriona

An experimental module system for Squeak/Smalltalk based on nested classes and inspired by Newspeak.

<https://github.com/hpi-swa/smalltalk-nested-classes>

SwaLint

An extendable code critics tool for Squeak/Smalltalk projects. Using object-oriented code metrics, SwaLint can give developers insight on the structure of their code and the architecture of their software. Codifying best-practices for Smalltalk programs, SwaLint is a hands-on tool to improve code quality.

<https://github.com/hpi-swa-teaching/SwaLint>

Community Code Project

A code review tool supporting ongoing collaborative discussions on code quality of a variety of meta objects such as packages, classes, protocols, and methods in the Squeak/Smalltalk environment.

<https://github.com/hpi-swa-lab/CommunityCodeReview>

Beiträge zu Projekten

Squeak/Smalltalk

An object-oriented, class-based, reflective, and self-sustaining programming system and a dialect of Smalltalk with support for live and exploratory programming.

<https://squeak.org>

OpenSmalltalk VM

The cross-platform virtual machine for Squeak, Cuis, Newspeak, and Pharo.

<https://github.com/OpenSmalltalk/opensmalltalk-vm>

SqueakSSL Plugin

A plugin for the OpenSmalltalkVM that provides an interface to the native SSL/TLS facilities with support for Windows, Unix, and MacOS.

<https://github.com/squeak-smalltalk/squeakssl>

SqueakCI

The base environment for running Squeak/Smalltalk continuous integration tests.

<https://github.com/squeak-smalltalk/squeak-ci>

Ohm

A library and language for building parsers, interpreters, compilers, and more.

<https://github.com/harc/ohm>

GraalVM

A high-performance, polyglot virtual machine.

<https://github.com/oracle/graal>

Truffle

A framework for implementing languages and instruments on top of the GraalVM.

<https://github.com/oracle/graal/tree/master/truffle>

Travis Build

A library used on Travis CI workers to generate build scripts. The library can be extended to provide community-supported languages such as Dart, R, and Smalltalk.
<https://github.com/travis-ci/travis-build>

PyPy

An alternative implementation of the Python programming language. It includes RPython, a translation and support framework for producing implementations of dynamic languages, emphasizing a clean separation between language specification and implementation aspects.

<http://pypy.org>

Topaz

A high-performance implementation of the Ruby programming language written in RPython.

<https://github.com/topazproject/topaz>

13 Drittmittelprojekte

Deutsche Forschungsgemeinschaft (DFG), Sachbeihilfe

LIVE: Empirical Studies on the Effects of Liveness on Programming

With our project, we want to forward liveness in development environments to improve program comprehension and with that to help programmers write better code. In the recent past, several research communities introduced the ideas of liveness as “an impression of changing a program while it is running” to an increasing number of domains. Various live programming tools and environments have been created and a number of commercial programming systems, such as Microsoft Excel and Jupyter Notebooks, support liveness to different degrees. While designers of programming environments assume liveness to improve domain exploration and program comprehension, the empirical backing for these claims so far is insufficient and inconclusive. This lack of experimental evidence might not only lead to liveness being promoted in settings in which it is not beneficial, but also in settings in which it yields detrimental effects. In our project, we will determine the effects of liveness on programming. By conducting a family of controlled experiments, we will investigate liveness with respect to task complexity, programmer experience, feedback cycles, and tool support. In a longitudinal study, we will inquire into ways programmers adopt live programming tools and workflows. The insights from this project and derived recommendations will support designers of future programming environments deciding when, where, and how to support liveness.

HPI-Stanford Design Thinking Research Program, 12th–13th Call (2019–2021)

Software Design in an Exploratory Culture I and II: Toward a Pattern Language to Discover, Learn, and Communicate Exploratory Programming Practices

Understanding unfolds only gradually. Because of that, software developers strive for simple and malleable design models and code elements to be able to react to insights and changes swiftly and concisely. While Design Thinking and agile development provide guidance mainly for user-centered and collaborative activities, complementary processes and supporting technologies suitable for exploring complex problem domains and solution spaces have been neglected. With programming-as-theory-building at the core of software system development, we want to apply the idea of pattern languages to capture and preserve original and modern exploratory programming practices. Based on the concise representation of each individual pattern,

such a pattern language for exploratory programming can support developers discover, learn, and communicate best practices to arrive at and maintain a high-quality code base. We argue that software development will greatly benefit from such a synergy of insights from the Design Thinking and Design Patterns communities to provide means to explore interesting problem domains and propose meaningful software solutions more creatively and effectively.

Oracle Labs (2020)

Advancing the Polyglot Programming Experience

Providing support for polyglot applications is a key part of the GraalVM ecosystem. Being able to use more than one language for building applications gives developers a much broader choice of tools and reusable software artifacts. However, the technology enabling this new style of programming can benefit from the design and evaluation of novel APIs, tools, and architectural approaches. In this project, we work on a coherent programming experience for polyglot programming. We advance and evaluate polyglot programming with GraalVM in a series of tasks and exercises. We build polyglot prototypes and applications that showcase the capabilities of GraalVM for different use cases. Based on the lessons learned, we work on concepts, tools, and APIs for an improved programming experience on a polyglot VM.

14 Mitarbeit in Programmkomitees

International Conference on Managed Programming Languages and Runtimes (MPLR, formerly ManLang, formerly PPPJ) 2020

2020-11-04–06

Manchester, UK (virtuell)

<https://mplr2020.cs.manchester.ac.uk>

Conference on Object-oriented Programming, Systems, Languages, and Applications (OOPSLA)

2020

2020-11-15–20

Chicago, Illinois, USA (virtuell)

<https://2020.splashcon.org>

European Conference on Object-Oriented Programming (ECOOP) 2020

2020-11-15–17

Co-located with Virtual SPLASH 2020

Berlin, Germany | Chicago, Illinois, USA (virtuell)

<https://2020.ecoop.org>

IEEE International Symposium on Visual Languages and Human Centric Computing (VL/HCC)

2020

2020-08-10–14

Dunedin, New Zealand (virtuell)

<https://conf.researchr.org/home/vlhcc2020>

Workshop on Live Programming (LIVE) 2020

2020-11-17

Co-located with SPLASH 2020, Berlin, Germany

Chicago, Illinois, USA (virtuell)

<https://2020.splashcon.org/home/live-2020/>

Workshop on Context-oriented Programming (COP) 2020

2020-07-21

Co-located with ECOOP 2020

Berlin, Germany (virtuell)

<https://2020.ecoop.org/home/COP-2020>

Human Centered Intelligent Systems (HCIS) 2020

2020-06-17–19

Special Track on Digital Architecture and Decision Management

Co-located with Smart Digital Futures (SDF) 2020

Split, Croatia (virtuell)

<http://hcis-20.kesinternational.org>

<http://sdf-20.kesinternational.org>

International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE) 2020

2020-06-09–11

Track on Validation of Safety critical Collaboration systems

Bayonne, France (virtuell)

<http://wetice2020.org/>

Evaluation of Novel Approaches to Software Engineering (ENASE) 2020

2020-04-05–06

Prague, Czech Republic (virtuell)

<http://www.enase.org/?y=2020>

Convivial Computing Salon (Salon) 2020

2020-05-03–09

Co-located with <Programming> 2020

Porto, Portugal (virtuell)

<https://2020.programming-conference.org/home/salon-2020/>

Programming Experience Workshop (PX/20) 2020

2020-03-23

Co-located with <Programming> 2020

Porto, Portugal (virtuell)

<http://programming-experience.org/px20/>

<https://2020.programming-conference.org/home/px-2020>

15 Begutachtungen und Gremientätigkeiten

Begutachtungen

Robert Hirschfeld

Association Internationale pour les Technologies Objets (AITO)

Deutsche Forschungsgesellschaft (DFG)

Deutscher Akademischer Austauschdienst (DAAD)

Studienstiftung des deutschen Volkes

Gutachten zu Bachelorarbeiten, Masterarbeiten und Dissertationen

Tobias Pape

ACM Student Research Competition Grand Finals

Gremientätigkeiten

Robert Hirschfeld

Steering Committee Past-Chair, ACM SIGPLAN Onward!

Steering Committee Past-Chair, AOSA

Steering Committee Member, ACM SIGPLAN Dynamic Languages Symposium (DLS)

Advisory Board Member, AOSA Programming Journal

Managing Editor, AOSA Programming Journal

Organizing Committee Member, Workshop on Context-oriented Programming (COP)

Organizing Committee Member, Programming Experience Workshop (PX)

Mitglied, Fakultätsrat der Digital-Engineering-Fakultät

Mitglied, Promotionsausschuss der Digital-Engineering-Fakultät

Sprecher, HPI-Forschungskolleg

Vorsitzender, Berufungskommission Digital Energy – Infrastructure

Vorsitzender, Berufungskommission Digital Energy – Ubiquity

Stellv. Vorsitzender, Berufungskommission Internet Technology and Systems

Stellv. Vorsitzender, Berufungskommission Internet Security

Jens Lincke

Organizing Committee Member, Workshop on Context-oriented Programming (COP)

Mitglied, Berufungskommission Digital Energy – Infrastructure

Mitglied, Berufungskommission Digital Energy – Ubiquity

Stellv. Mitglied, Fakultätsrat der Digital-Engineering-Fakultät

Fabio Niephaus

Project Advisory Board Member, GraalVM

Tobias Pape

Managing Editor, AOSA Programming Journal

Patrick Rein

Secretary, AOSA

Treasurer, AOSA

Mitglied, Fakultätsrat der Digital-Engineering-Fakultät

Marcel Taeumel

Member, Squeak Oversight Board

1. Vorsitzender, Squeak Deutschland e.V.

16 Tagungsorganisation

Jahresversammlung des Squeak Deutschland e.V.

2020-11-06

Hasso-Plattner-Institut, Potsdam (virtuell)

https://squeak.de/news/2020/10/15/squeak_treffen_mv/

ACM SIGPLAN Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH) 2020

2020-11-15..20

Chicago, Illinois, USA (virtuell)

<https://2020.splashcon.org>

ACM SIGPLAN Dynamic Languages Symposium (DLS) 2020

2020-11-18..20

Co-located with SPLASH 2020

Chicago, Illinois, USA (virtuell)

<https://conf.researchr.org/home/dls-2020?>

ACM SIGPLAN Symposium on New Ideas in Programming and Reflections on Software (Onward!) 2020

2020-11-17..18

Co-located with SPLASH 2020

Chicago, Illinois, USA (virtuell)

<https://2020.splashcon.org/track/splash-2020-Onward-papers?>

<https://2020.splashcon.org/track/splash-2020-Onward-Essays?>

European Conference on Object-Oriented Programming (ECOOP) 2020

2020-11-15..17

Co-located with SPLASH 2020

Berlin, Germany | Chicago, Illinois, USA (virtuell)

<https://2020.ecoop.org>

Workshop on Context-oriented Programming (COP) 2020

2020-07-21

Co-located with ECOOP 2020

Berlin, Germany (virtuell)

<https://2020.ecoop.org/home/COP-2020>

Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems (ICOOOLPS) 2020

Co-located with ECOOP 2020

Berlin, Germany | postponed

<https://2020.ecoop.org/home/ICOOOLPS-2020>

Gemeinsamer Workshop der Graduiertenkollegs

2020-06-07..10

Schloss Dagstuhl, Germany (virtuell)

<https://www.dagstuhl.de/de/programm/kalender/evhp/?semnr=20243>

HOPL IV: The Fourth ACM SIGPLAN History of Programming Languages Conference

2020-06-20..22

Co-located with PLDI 2020

London, UK | postponed

<https://hopl4.sigplan.org>

Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs) 2020

2020-04-08

Co-located with <Programming> 2020

Porto, Portugal (virtuell)

<https://2020.programming-conference.org/home/MoreVMs-2020>

International Conference on the Art, Science, and Engineering of Programming (<Programming>)

2020

2020-03-23..26

Porto, Portugal | postponed

<https://2020.programming-conference.org/>

Programming Experience Workshop (PX/20) 2020

2020-03-23

Co-located with <Programming> 2020

Porto, Portugal (virtuell)

<http://programming-experience.org/px20/>

<https://2020.programming-conference.org/home/px-2020>

17 Herausgeberschaft

Zeitschriften

Journal on The Art, Science, and Engineering of Programming

Tobias Pape und Robert Hirschfeld

<https://programming-journal.org/2020>

Tagungsbände

Proceedings of the *34th European Conference on Object-Oriented Programming (ECOOP) 2020*. Leibniz International Proceedings in Informatics (LIPIcs), vol. 166, Dagstuhl, Germany, 2020.

Robert Hirschfeld and Tobias Pape (eds.)

Selected Papers from the 2020 European Conference on Object-Oriented Programming. Elsevier Science of Computer Programming (SCICO) Special Issue, vol. 197, October 1, 2020.

Robert Hirschfeld (ed.)

Proceedings of the *Workshop on Context-oriented Programming (COP) 2020*. co-located with the European Conference on Object-oriented Programming (ECOOP), Berlin, Germany, July 21, 2020, ACM DL.

Robert Hirschfeld, Atsushi Igarashi, Paul Leger, Jens Lincke, and Hidehiko Masuhara (eds.)

Proceedings of the *Programming Experience 2020 (PX/20) Workshop*. co-located with the International Conference on the Art, Science, and Engineering of Programming (⟨Programming⟩), Porto, Portugal, March 23, 2020, ACM DL.

Luke Church, Richard P. Gabriel, Robert Hirschfeld, and Hidehiko Masuhara

Proceedings of the *Fourth ACM SIGPLAN History of Programming Languages Conference (HOPL IV)*. co-located with the Conference on Programming Language Design and Implementation (PLDI) 2020 (postponed)

Lars Birkedal, Richard P. Gabriel, and Guy L. Steele Jr. (eds.)

Web-Portale

Fachgebiet Software-Architekturen

<https://www.hpi.de/swa>

Programmiersprachen, -werkzeuge und -umgebungen

<https://squeak.org>

<https://squeak.de>

<https://squeak-ev.de>

<https://lively-kernel.org>

Zeitschriften

<https://programming-journal.org>

Konferenzen

<https://programming-conference.org>

<https://modularity.info>

<http://programming-experience.org>

<https://dynamic-languages-symposium.org>

<https://onward-conference.org>

Forschungsverbände

<https://aosa-inc.org>

Software-Repositoryen

<https://github.com/orgs/hpi-swa>

<https://github.com/orgs/hpi-swa-lab>

<https://github.com/orgs/hpi-swa-teaching>

<https://www.hpi.uni-potsdam.de/hirschfeld/squeaksource>

18 Mitgliedschaften

Robert Hirschfeld
ACM, AITO, AOSA, Squeak Deutschland e.V.

Jens Lincke
ACM, Squeak Deutschland e.V.

Toni Mattis
ACM

Fabio Niephaus
ACM, Squeak Deutschland e.V., CdE e.V.

Tobias Pape
AOSA, Squeak Deutschland e.V.

Patrick Rein
ACM, AOSA, Squeak Deutschland e.V.

Marcel Taeumel
Squeak Deutschland e.V.

19 Auszeichnungen

Masterabschlüsse mit Auszeichnung

Tom Beckmann

Sandblocks: Design and Implementation of a Projectional, Live Programming Environment Using a Block-based User Interface (2020)

Falco Dürsch

Learning from Failure: A History-based, Lightweight Test Prioritization Technique Connecting Software Changes to Test Failures (2019)

20 Sonstiges

Existenzgründungen aus der Wissenschaft (EXIST)

Typeshift

Projektlaufzeit: Januar 2020 bis März 2021

Projektteam: Doreen Stahr, Robin Schreiber

Mentor: Robert Hirschfeld

