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Aims and Scope
The Dagstuhl Artifacts Series (DARTS) publishes evaluated research data and artifacts in all areas of computer science. An artifact can be any kind of content related to computer science research, e.g., experimental data, source code, virtual machines containing a complete setup, test suites, or tools.

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Contents

Preface
Alessandra Gorla and Stefan Winter 0:vii

Artifact Evaluation Process
..... 0:ix

Artifact Evaluation Committee
..... 0:xi

Artifacts

How to Take the Inverse of a Type (Artifact)
Daniel Marshall and Dominic Orchard 1:1–1:3

Defining Corecursive Functions in Coq Using Approximations (Artifact)
Vlad Rusu and David Nowak 2:1–2:2

Compiling Volatile Correctly in Java (Artifact)
Shuyang Liu, John Bender, and Jens Palsberg 3:1–3:2

Direct Foundations for Compositional Programming (Artifact)
Andong Fan, Xuejing Huang, Han Xu, Yaozhu Sun, and Bruno C. d. S. Oliveira 4:1–4:3

Elementary Type Inference (Artifact)
Jinxu Zhao and Bruno C. d. S. Oliveira 5:1–5:2

Qilin: A New Framework for Supporting Fine-Grained Context-Sensitivity in Java Pointer Analysis (Artifact)
Dongjie He, Jingbo Lu, and Jingling Xue 6:1–6:3

Automatic Root Cause Quantification for Missing Edges in JavaScript Call Graphs (Artifact)
Madhurima Chakraborty, Renzo Olivares, Manu Sridharan, and Behnaz Hassanshahi 7:1–7:5

Functional Programming for Distributed Systems with XC (Artifact)
Giorgio Audrito, Roberto Casadei, Ferruccio Damiani, Guido Salvaneschi, and Mirko Viroli 8:1–8:4

Stay Safe Under Panic: Affine Rust Programming with Multiparty Session Types (Artifact)
Nicolas Lagaillardie, Rumyana Neykova, and Nobuko Yoshida 9:1–9:16

Verified Compilation and Optimization of Floating-Point Programs in CakeML (Artifact)
Heiko Becker, Robert Rabe, Eva Darulova, Magnus O. Myreen, Zachary Tatlock, Ramana Kumar, Yong Kiam Tan, and Anthony Fox 10:1–10:2

36th European Conference on Object-Oriented Programming (ECOOP 2022).
Editors: Alessandra Gorla and Stefan Winter
Dagstuhl Artifacts Series
Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

Low-Level Bi-Abduction (Artifact)
Lukáš Holík, Petr Peringer, Adam Rogalewicz, Veronika Šoková, Tomáš Vojnar, and Florian Zuleger 11:1–11:6

REST: Integrating Term Rewriting with Program Verification (Artifact)
Zachary Grannan, Niki Vazou, Eva Darulova, and Alexander J. Summers 12:1–12:2

A Deterministic Memory Allocator for Dynamic Symbolic Execution (Artifact)
Daniel Schemmel, Julian Büning, Frank Busse, Martin Nowack, and Cristian Cadar 13:1–13:2

Ferrite: A Judgmental Embedding of Session Types in Rust (Artifact)
Ruo Fei Chen, Stephanie Balzer, and Bernardo Toninho 14:1–14:2

A Self-Dual Distillation of Session Types: Mechanized Proofs (Artifact)
Jules Jacobs 15:1–15:2

Prisma: A Tierless Language for Enforcing Contract-Client Protocols in Decentralized Applications (Artifact)
David Richter, David Kretzler, Pascal Weisenburger, Guido Salvaneschi, Sebastian Faust, and Mira Mezini 16:1–16:3

Union Types with Disjoint Switches (Artifact)
Baber Rehman, Xuejing Huang, Ningning Xie, and Bruno C. d. S. Oliveira 17:1–17:6

Global Type Inference for Featherweight Generic Java – Prototype Implementation (Artifact)
Andreas Stadelmeier, Martin Plümicke, and Peter Thiemann 18:1–18:4

API Generation for Multiparty Session Types, Revisited and Revised Using Scala 3 (Artifact)
Guillermina Cledou, Luc Edixhoven, Sung-Shik Jongmans, and José Proença 19:1–19:4

Concolic Execution for WebAssembly (Artifact)
Filipe Marques, José Fragoso Santos, Nuno Santos, and Pedro Adão 20:1–20:3

Design-by-Contract for *Flexible* Multiparty Session Protocols (Artifact)
Lorenzo Gheri, Ivan Lanese, Neil Sayers, Emilio Tuosto, and Nobuko Yoshida ... 21:1–21:5

Accumulation Analysis (Artifact)
Martin Kellogg, Narges Shadab, Manu Sridharan, and Michael D. Ernst 22:1–22:3

JavaScript Sealed Classes (Artifact)
Manuel Serrano 23:1–23:4

PEDroid: Automatically Extracting Patches from Android App Updates (Artifact)
Hehao Li, Yizhuo Wang, Yiwei Zhang, Juanru Li, and Dawu Gu 24:1–24:2

Synchron – An API and Runtime for Embedded Systems (Artifact)
Abhiroop Sarkar and Bo Joel Svensson 25:1–25:2

What If We Don't Pop the Stack? The Return of 2nd-Class Values (Artifact)
Anxhelo Xhebraj, Oliver Bračevac, Guannan Wei, and Tiark Rompf 26:1–26:2

Preface

ECOOP has a long-standing tradition of offering artifact evaluation dating back to 2013. For the first time this year, though, the artifact evaluation process involved every single paper submission to ECOOP 2022, rather than just accepted papers, and happened in parallel with the paper review process. Besides providing feedback on the artifacts irrespective of paper acceptance, evaluation results were made available to the technical PC. Artifact submissions could thus provide more insights on the technical contributions described in the papers, and help to improve the overall review process.

To handle the higher review load that such a process entails, we recruited an artifact evaluation committee that was almost twice as large as for last year's ECOOP and included both experienced and novice artifact reviewers. The submission deadlines for artifacts were just 10 days after the paper deadlines for both submission rounds. We received a total of 57 submissions (39 for R1 and 18 for R2). After a kick-the tires review and author response phase, during which authors had the opportunity to clarify or address technical issues with their submissions, each submitted artifact was reviewed by at least three committee members, leading to an overall review load of 4-5 artifact reviews per committee member.

Following the positive experience with adopting ACM's artifact badges for ECOOP 2021, we adopted the same badging policies for ECOOP 2022. The artifact evaluation committee positively evaluated 46 submissions (33/13 for R1/R2) as *functional* or *reusable*, out of which 25 belong to papers to appear in the technical program of ECOOP 2022. 7 submitted artifacts (4/3 in R1/R2) that did not pass the bar for the *functional* and *reusable* badges, were found eligible for the *available* badge, 2 of which are associated with papers accepted for presentation at ECOOP 2022 (both from R1).

In order to streamline the artifact review process and to decouple artifact from paper review aspects, we asked authors to submit documentation of explicit *claims* in a pre-specified format that the artifact evaluation committee checked the artifacts against. At the same time, the PC could assess the *importance of these claims* for the submitted papers as a frame of reference for the strength of support for the paper that an artifact can provide. This separation greatly facilitated the artifact evaluation committee's discussions regarding which badges to award.

The smooth and thorough artifact evaluation process would have not been possible without the 39 members of the committee, who handled the artifact review workload and contributed to the technical PC discussions with great dedication. We would like to thank them for their valuable work and the inspiring discussions. We would also like to thank the ECOOP 2022 program committee chairs Jan Vitek and Karim Ali for the pleasant and productive interactions over the coordination of the paper and artifact review processes and the Dagstuhl Publishing team for their assistance with preparing this DARTS volume.

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Artifact Evaluation Process

With ECOOP's long standing tradition of artifact evaluations, the artifact review process for ECOOP 2022 builds on a wealth of experiences and insights from previous years and adopts concepts that have proven successful, such as the 'kick-the-tires' review phase and the adoption of the ACM's badging scheme. The details of the process are documented in the call for artifacts (`https://doi.org/10.5281/zenodo.6553744`), the artifact submission template (`https://doi.org/10.5281/zenodo.5720714`), and an artifact review template (`https://doi.org/10.5281/zenodo.5750738`) that we provided as guidance for artifact reviewers. In the following we briefly highlight the changes compared to previous years' evaluations.

Badges

Following the first adoption of ACM's artifact badges for ECOOP 2021, we adopted the same badging policy, but changed the badges' sub-branding for ECOOP. We are grateful to Ferruccio Damiani, ACM's Scott Delman and Wayne Graves, the ECOOP 2021 artifact evaluation chairs William G. J. Halfond and Quentin Stiévenart, and Dagstuhl Publishing's Michael Wagner, who all provided help and guidance in the badge adoption and branding processes.

Coupling Paper Reviews with Artifact Evaluations

The biggest changes for this year's artifact evaluation result from a tight coupling with the paper review process. The goal of this coupling was to support the paper review process by making positive insights from the artifact evaluation accessible to the technical PC. While paper and artifact submissions were still handled separately (with artifact submission deadlines 10 days after the paper deadlines) and in different submission systems, information from the artifact reviews was carried over to the technical PC by having artifact reviewers serving as the external review committee for papers. This change had important implications for the review process:

- The load for the artifact evaluation committee increased, because committee members had to handle paper reviews in addition to artifact reviews. Moreover, artifact reviews were no longer conditioned on paper acceptance, which led to a higher number of artifact submissions to be reviewed. We addressed the higher load by (a) recruiting a committee almost twice as large as the previous year's, (b) involving mostly experienced artifact reviewers, and (c) streamlining the review process and providing more extensive guidance and evaluation criteria to reviewers.
- To ensure that artifact reviews provide useful information for the paper reviews, we asked the authors of artifact submissions to provide precise claims regarding their artifacts' functionality and reusability. These claims did not only provide a clear frame of reference for the reviewers' evaluation of the artifacts. At the same time, it provided the technical PC with clear information which conclusions in the papers the authors consider as backed up by their artifacts. The artifact evaluation outcome provided information whether the artifacts indeed supported these expectations expressed by the authors themselves. In addition, the submission template for these claims (`https://doi.org/10.5281/zenodo.572071`) provided additional information about the artifact to reviewers in a uniform format.

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