38th European Conference on Object-Oriented Programming

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Edited by

Jonathan Aldrich

Guido Salvaneschi

Editors

Jonathan Aldrich
Carnegie Mellon University, Pittsburgh, PA, USA
jonathan.aldrich@cmu.edu

Guido Salvaneschi
University of St. Gallen, Switzerland
guido.salvaneschi@unisg.ch

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Message from the Program Chairs

Started in 1987, ECOOP is Europe's oldest programming conference, welcoming papers on all practical and theoretical investigations of programming languages, systems, and environments that provide innovative solutions to real problems as well as evaluations of existing solutions. Papers were submitted to one of four categories: *Research* for papers that advance the state of the art in programming; *Replication* for empirical evaluations that reconstruct a published experiment in a different context in order to validate the results of that earlier work; *Experience* for applications of known techniques in practice; and *Pearl/Brave New Idea* for papers that either explain a known idea in an elegant way or unconventional papers introducing ideas that may take some time to substantiate. The chairs thank the Program Committee for their dedication to ensuring a quality program and providing constructive feedback to authors: Alvin Cheung, Eva Darulova, Jenna DiVincenzo (Wise), Werner Dietl, Jens Dietrich, Sebastian Erdweg, Patrick Eugster, Carla Ferreira, Simon J. Gay, Jeremy Gibbons, Elisa Gonzalez Boix, Arjun Guha, Suresh Jagannathan, Ranjit Jhala, Yu David Liu, Mira Mezini, Heather Miller, Ragnar Mogk, David Naumann, Marianna Rapoport, António Ravara, Manuel Serrano, Peter Thiemann, Emilio Tuosto, and Elena Zucca.

This year, we continued a number of innovations that were first introduced in 2022:

- **Multiple rounds.** ECOOP has two main rounds of submissions per year (Jan 17 and Apr 17). Each round supports both minor and major revisions. Major revisions are handled in the next round (either the same year or the next) by the same reviewers. In the second round we gave as many papers as possible the chance to try revising by the minor revision deadline so that they could make the 2024 program; all of these resubmissions were accepted.
- **No format or length restrictions.** In order reduce friction for authors, papers can come in any format and at any length. This applies to submissions. Final versions must abide by the publisher's requirements.
- **Artifacts and Papers together.** Every submitted paper can be accompanied with an artifact, submitted a few days after the paper. Both submissions are evaluated in parallel by overlapping committees as members of the artifact evaluation committee were invited to served on the conference review committee.
- **Journal First/Last.** Papers can be submitted either one of three associated journals and be invited to present at the meeting. Furthermore, some accepted papers can be forwarded to journals.

In addition, this year we introduced a new review process, in which all papers were rated on each of the following criteria:

- **Soundness:** How well the paper's contributions are supported by rigorous application of appropriate research methods;
- **Significance:** The extent to which the paper's contributions are novel, original, and important, with respect to the existing body of knowledge;
- **Presentation:** Whether the paper's quality of writing meets the high standards of ECOOP.

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After the author response and reviewer discussions, papers were accepted if the PC decided that the paper meets our high bar for Soundness and Presentation, and if at least one reviewer judges the paper to meet the bar for Significance. The goal of this process is to ensure quality of writing and confidence in results, while assuming that if one reviewer finds the paper to be significant then there will be readers who do so as well.

Overall, we found that most of these innovations to have worked well. The new reviewing criteria helped focus the reviewer discussion on what are the main issues with each paper. The acceptance criteria did not affect many papers but made a difference for a few; we believe the result is a more diverse program than might have been accepted based on a traditional, one-dimensional quality rating.

Overall, 59 papers were submitted in the first round and 53 in the second round. Each of these included some resubmissions of papers that received a reject or major revision judgment in prior reviewing rounds. In the end 47 papers were accepted, in many cases after a final round of checking for papers that initially received a conditional accept rating. As is common with journals, the ability to resubmit improved versions of a paper allowed the conference to accept a larger percentage of papers overall than in prior editions of ECOOP, while maintaining a high quality thereshold.

We hope that future chairs will continue to experiment with more, and perhaps, different innovations that will enrich the ECOOP community further.

Jonathan Aldrich
Program Committee Co-chair
Carnegie Mellon University

Guido Salvaneschi
Program Committee Co-chair
University of St. Gallen

Message from the Artifact Evaluation Chairs

ECOOP has a long-standing tradition of offering artifact evaluation dating back to 2013. Following the process introduced in 2022, the artifact evaluation involved every single paper submission to ECOOP 2024, rather than just accepted papers. As such, it happened in parallel with the paper review process. This approach has two benefits: all authors who submitted an artifact received feedback (independently from paper acceptance), and evaluation results were made available to the reviewers of the papers. In addition, senior artifact evaluation committee members (representing half of the members) contributed to an average of 2 paper reviews to the technical research track as members of the extended review committee, improving the information sharing between the two processes. Artifact submissions could, thus, provide more insights into the technical contributions described in the papers and help to improve the overall review process.

To handle the high review load that such a process entails, we recruited a large artifact evaluation committee that included a total of 61 artifact reviewers. The artifact submissions were due around one week after the paper deadline, for both submission rounds of ECOOP. We received a total of 64 submissions (41 for R1 and 23 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 three committee members.

We have followed ACM's badging policy[1] since 2023; details about the evaluation process are provided in the preface to the Artifact volume.[2] Out of the 64 submissions, the artifact evaluation committee awarded the highest qualification (available, functional and reusable badges) to 19 artifacts, the available and functional badges to 18 artifacts, and the available badge to 23 artifacts. Out of those 64 submissions, 33 were associated with papers accepted for presentation at ECOOP 2024.

The smooth and thorough artifact evaluation process would have not been possible without the 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, feedback to authors and the inspiring discussions! We would also like to thank the ECOOP 2024 program committee chairs Guido Salvaneschi and Jonathan Aldrich for the pleasant and productive interactions over the coordination of the paper and artifact review processes, and the Dagstuhl Publishing team for their proactive and highly responsive assistance during the preparation of this DARTS volume.

Karine Even-Mendoza
King's College London

Raphaël Monat
Inria Lille & University of Lille

Artifact Evaluation Co-chairs

[1] https://www.acm.org/publications/policies/artifact-review-and-badging-current
[2] https://doi.org/10.4230/DARTS.10.2.0

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Foreword by the President of AITO

After last year's event in Seattle, ECOOP 2024 returns to the heart of Europe, hosted by the prestigious Vienna University of Technology (TU Wien). Before this year, the conference had been held in Austria only once, 28 years ago in Linz. Therefore, I am especially pleased to welcome the ECOOP community to Vienna.

Although I have been involved in many ECOOP conferences, ECOOP 2024 holds special significance for me, as this is my first time attending the conference as President of AITO. Recently, the AITO Executive Board has undergone significant renewal. I am glad to welcome Christian Hammer and Ben Hermann as the new Secretary and Treasurer of the Board, respectively.

I owe deep gratitude to Eric Jul and Walter Olthoff, our previous President and Treasurer, for supporting us during this transition and for their long-standing contributions to the AITO community and the success of ECOOP.

As in previous years, ECOOP 2024 is co-located with ISSTA and, for the first time, with MPLR. The ECOOP 2024 team, along with the ISSTA and MPLR teams, has done a great job in putting together an excellent and rich program for the conferences, including ten workshops, a doctoral symposium, tool demos, and tutorials. A huge thanks to them and to all others who have contributed.

I am looking forward to excellent conferences and workshops, great presentations fostering personal interaction, and excellent keynotes, including talks by the two 2024 Dahl-Nygaard Prize Winners. Enjoy the conference and Vienna.

Davide Ancona
AITO President

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List of Authors

Luca Aceto (1, 2)
Reykjavík University, Iceland;
Gran Sasso Science Institute, L'Aquila, Italy

Jason Ansel (29)
Meta, Menlo Park, CA, USA

Sven Apel (36)
Saarland University, Saarland Informatics Campus, Saarbrücken, Germany

Barnabas Arvay (3)
University of Freiburg, Germany

Steven Arzt (4)
Fraunhofer SIT | ATHENE – National Research Center for Applied Cybersecurity, Darmstadt, Germany

Duncan Paul Attard (2)
University of Glasgow, UK

Sacha-Élie Ayoun (25, 26)
Imperial College London, UK

Lorenzo Bacchiani (5)
University of Bologna, Italy

Casper Bach Poulsen (47)
Delft University of Technology, The Netherlands

Stephanie Balzer (11, 40)
Carnegie Mellon University, Pittsburgh, PA, USA

Felix Berlakovich (6)
University of the Bundeswehr Munich, Neubiberg, Germany

Matthias Bernad (7)
μCSRL – Munich Computer Systems Research Lab, Research Institute CODE, University of the Bundeswehr Munich, Neubiberg, Germany

Sahil Bhatia (32)
University of California, Berkeley, CA, USA

Eric Bodden (36, 37)
Paderborn University, Department of Computer Science, Heinz Nixdorf Institute, Germany;
Fraunhofer IEM, Paderborn, Germany

Mario Bravetti (5)
University of Bologna, Italy

Bob Brockbernd (8)
Delft University of Technology, The Netherlands

Stefan Brunthaler (6, 7)
University of the Bundeswehr Munich, Neubiberg, Germany

Timon Böhler (33)
Technische Universität Darmstadt, Germany

Colin Cai (32)
University of California, Berkeley, CA, USA

Paris Carbone (42)
EECS and Digital Futures, KTH Royal Institute of Technology, Stockholm, Sweden;
Digital Systems, RISE Research Institutes of Sweden, Stockholm, Sweden

Luís Carvalho (9)
NOVA LINCS, NOVA School of Science and Technology, Caparica, Portugal

Madhurima Chakraborty (10)
University of California, Riverside, CA, USA

Le Chang (24)
University of Maryland, College Park, MD, USA

Stephen Chang (44)
University of Massachusetts Boston, MA, USA

Sheng Chen (21, 39)
CACS, University of Louisiana, Lafayette, LA, USA

Alvin Cheung (32)
University of California, Berkeley, CA, USA

Shigeru Chiba (23)
The University of Tokyo, Japan

Maria Christakis (43)
TU Wien, Austria

Rance Cleaveland (24)
University of Maryland, College Park, MD, USA

João Costa Seco (9)
NOVA LINCS, NOVA School of Science and Technology, Caparica, Portugal

Caroline Cronjäger (25)
Ruhr-Universität Bochum, Germany

Sixuan Dang (46)
Duke University, Durham, NC, USA

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Farzaneh Derakhshan (11, 40)
Illinois Institute of Technology, Chicago, IL, USA

Luca Di Grazia (27)
Università della Svizzera italiana (USI), Lugano, Switzerland

Aleksandar S. Dimovski (12)
Mother Teresa University, Skopje, North Macedonia

Thi Thu Ha Doan (3)
University of Freiburg, Germany

Vlastimil Dort (13)
Charles University, Prague, Czech Republic

M. Anton Ertl (14)
TU Wien, Austria

Sam Estep (15)
Software and Societal Systems Department, Carnegie Mellon University, Pittsburgh, PA, USA

Marc Feeley (28)
Université de Montréal, Canada

Matthias Felleisen (44)
Northeastern University, Boston, MA, USA

Wolfram Fischer (37)
SAP Security Research, Mougins, France

Cormac Flanagan (16)
University of California, Santa Cruz, CA, USA

Adrian Francalanza (2)
University of Malta, Msida, Malta

Stephen N. Freund (16)
Williams College, Williamstown, MA, USA

Philippa Gardner (25, 26)
Imperial College London, UK

Marco Giunti (5)
University of Oxford, UK

Aakash Gnanakumar (10)
University of California, Riverside, CA, USA

Daniele Gorla (1)
Sapienza, Università di Roma, Italy

Ben Greenman (44)
University of Utah, Salt Lake City, UT, USA

Arie Gurfinkel (43)
University of Waterloo, Canada

Philipp Haller (17, 42)
KTH Royal Institute of Technology, Stockholm, Sweden

Dan Hao (39)
Key Lab of HCST (PKU), MOE, School of Computer Science, Peking University, Beijing, China

Niranjan Hasabnis (32)
Intel Labs, Menlo Park, CA, USA

Dongjie He (18)
University of New South Wales, Sydney, Australia; Chongqing University, China

Yi He (21)
Data Science, College William & Mary, Williamsburg, VA, USA

Ping Hou (19)
University of Oxford, UK

Florian Huemer (20)
Johannes Kepler University, Linz, Austria

Ayman Hussein (17)
Technical University of Denmark, Lyngby, Denmark

Anna Ingólfsdóttir (2)
Reykjavik University, Iceland

Shachar Itzhaky (22)
Technion, Haifa, Israel

Mohammad Wahiduzzaman Khan (21)
CACS, University of Louisiana, Lafayette, LA, USA

Elad Kinsbruner (22)
Technion, Haifa, Israel

Jonas Klauke (37)
Paderborn University, Germany

Chaitanya Koparkar (38)
Indiana University, Bloomington, IN, USA

Nikita Koval (8)
JetBrains, Amsterdam, The Netherlands

Milind Kulkarni (38)
Purdue University, West Lafayette, IN, USA

Nicolas Lagaillardie (19)
Imperial College London, UK

Yi Lee (24)
University of Maryland, College Park, MD, USA

David Leopoldseder (20)
Oracle Labs, Vienna, Austria

Ondřej Lhoták (13)
University of Waterloo, Canada

Liyi Li (24)
Iowa State University, Ames, IA, USA

Senxi Li (23)
The University of Tokyo, Japan

Yufeng Li (13)
University of Cambridge, UK

Jingbo Lu (18)
University of New South Wales, Sydney, Australia; Shanghai Sectrend Information Technology Co., Ltd, China

Stian Lybech (1)
Reykjavík University, Iceland

Andreas Lööw (25, 26)
Imperial College London, UK

Petr Maj (27)
Czech Technical University, Prague, Czech Republic

Petar Maksimović (25, 26)
Imperial College London, UK; Runtime Verification Inc., Chicago, IL, USA

Olivier Melançon (28)
Université de Montréal, Canada

Hernán Melgratti (17)
University of Buenos Aires & Conicet, Argentina

Mira Mezini (33)
Technische Universität Darmstadt, Germany; The Hessian Center for Artificial Intelligence (hessian.AI), Darmstadt, Germany

Zeina Migeed (29)
University of California, Los Angeles (UCLA), CA, USA

Marc Miltenberger (4)
Fraunhofer SIT | ATHENE – National Research Center for Applied Cybersecurity, Darmstadt, Germany

Fabrizio Montesi (31)
University of Southern Denmark, Odense, Denmark

Raphael Mosaner (20)
Oracle Labs, Linz, Austria

João Mota (5)
NOVA LINCS, Nova University Lisbon, Portugal;
NOVA School of Science and Technology, Caparica, Portugal

Stefanie Muroya (27)
Institute of Science and Technology Austria (ISTA), Klosterneuburg, Austria

Hanspeter Mössenböck (20)
Johannes Kepler University, Linz, Austria

Anders Møller (10)
Aarhus University, Denmark

Daniele Nantes-Sobrinho (25, 26)
Imperial College London, UK

Jorge A. Navas (43)
Certora, Seattle, WA, USA

Ryan Newton (38)
Purdue University, West Lafayette, IN, USA

Wode Ni (15)
Software and Societal Systems Department, Carnegie Mellon University, Pittsburgh, PA, USA

Alexander Nicolellis (24)
Iowa State University, Ames, IA, USA

Julius Näumann (4)
TU Darmstadt | ATHENE – National Research Center for Applied Cybersecurity, Darmstadt, Germany

Burcu Kulahcioglu Ozkan (8)
Delft University of Technology, The Netherlands

Vineeth Paleri (35)
National Institute of Technology Calicut, India

Jens Palsberg (29)
University of California, Los Angeles (UCLA), CA, USA

Pavel Parízek (13)
Charles University, Prague, Czech Republic

Nisarg Patel (30)
New York University, NY, USA

Bernd Paysan (14)
net2o, Munich, Germany

Hila Peleg (22)
Technion, Haifa, Israel

Artem Pelenitsyn (38)
Purdue University, West Lafayette, IN, USA

Marco Peressotti (31)
University of Southern Denmark, Odense, Denmark

Dan Plyukhin (31)
University of Southern Denmark, Odense, Denmark

Serena Elisa Ponta (37)
SAP Security Research, Mougins, France

Alex Potanin (34, 45)
Australian National University, Canberra, Australia

Aleksandar Prokopec (20)
Oracle Labs, Zurich, Switzerland

Jie Qiu (32)
Pittsburgh, PA, USA

Mike Rainey (38)
Carnegie Mellon University, Pittsburgh, PA, USA

António Ravara (5)
NOVA LINCS, Nova University Lisbon, Portugal; NOVA School of Science and Technology, Caparica, Portugal

James Reed (29)
Fireworks AI, Redwood City, CA, USA

David Richter (33)
Technische Universität Darmstadt, Germany

Amos Robinson (34)
Sydney, Australia

Raven Rothkopf (15)
Barnard College, Columbia University, New York, NY, USA

Reshma Roy (35)
National Institute of Technology, Calicut, India

Sreekala S (35)
National Institute of Technology Calicut, India

Florian Sattler (36)
Saarland University, Saarland Informatics Campus, Saarbrücken, Germany

Alceste Scalas (17)
Technical University of Denmark, Lyngby, Denmark

Fabian Schiebel (36)
Fraunhofer Institute for Mechatronic Systems Design IEM, Paderborn, Germany

Stefan Schott (37)
Paderborn University, Germany

Philipp Dominik Schubert (36)
Heinz Nixdorf Institute, Paderborn, Germany

Ilya Sergey (45)
National University of Singapore, Singapore

Manuel Serrano (28)
Inria/UCA, Inria Sophia Méditerranée, Sophia Antipolis, France

Sanjit A. Seshia (32)
University of California, Berkeley, CA, USA

Dennis Shasha (30)
New York University, NY, USA

Konrad Siek (27)
Czech Technical University, Prague, Czech Republic

Vidush Singhal (38)
Purdue University, West Lafayette, IN, USA

Jonas Spenger (42)
EECS and Digital Futures, KTH Royal Institute of Technology, Stockholm, Sweden

Manu Sridharan (10)
University of California, Riverside, CA, USA

Ke Sun (39)
Key Lab of HCST (PKU), MOE, School of Computer Science, Peking University, Beijing, China

Joshua Sunshine (15)
Software and Societal Systems Department, Carnegie Mellon University, Pittsburgh, PA, USA

Peter Thiemann (3)
University of Freiburg, Germany

Richard Trefler (43)
University of Waterloo, Canada

Emilio Tuosto (17)
Gran Sasso Science Institute, L'Aquila, Italy

Bas van den Heuvel (40)
HKA Karlsruhe, Germany; University of Freiburg, Germany; University of Groningen, The Netherlands

Arie van Deursen (8)
Delft University of Technology, The Netherlands

Martin Vassor (41)
University of Oxford, UK

Aleksey Veresov (42)
EECS and Digital Futures, KTH Royal Institute of Technology, Stockholm, Sweden

Jan Vitek (27)
Charles University, Prague, Czech Republic; Northeastern University, Boston, MA, USA

Michael Vollmer (38)
University of Kent, UK

Di Wang (39)
Key Lab of HCST (PKU), MOE, School of Computer Science, Peking University, Beijing, China

Meng Wang (39)
University of Bristol, UK

Pascal Weisenburger (33)
University of St. Gallen, Switzerland

Scott Wesley (43)
Dalhousie University, Halifax, Canada

Ashton Wiersdorf (44)
University of Utah, Salt Lake City, UT, USA

Thomas Wies (30)
New York University, NY, USA

Xiaodi Wu (24)
University of Maryland, College Park, MD, USA

Valentin Wüstholz (43)
ConsenSys, Vienna, Austria

Jingling Xue (18)
University of New South Wales, Sydney, Australia

Tetsuro Yamazaki (23)
The University of Tokyo, Japan

Ziyi Yang (45)
National University of Singapore, Singapore

Yue Yao (11)
Carnegie Mellon University, Pittsburgh, PA, USA

Nobuko Yoshida (19, 41)
University of Oxford, UK

David Young (45)
University of Kansas, Lawrence, KS, USA

Danfeng Zhang (46)
Duke University, Durham, NC, USA

Quan Zhou (46)
Penn State University, University Park, PA, USA

Mingwei Zhu (24)
University of Maryland, College Park, MD, USA

Joseph Zullo (38)
Purdue University, West Lafayette, IN, USA

Aron Zwaan (47)
Delft University of Technology, The Netherlands