

8th Conference on Algebra and Coalgebra in Computer Science

CALCO 2019, June 3–6, 2019, London, United Kingdom

Edited by

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■ Preface

This volume contains the proceedings of the 8th Conference on Algebra and Coalgebra in Computer Science (CALCO), held at University College London, London, UK, from June 3 to June 6, 2019. CALCO took place under the auspices of IFIP WG 1.3 “Foundations of System Specification”. Local organizers were Philipa Gardner, Emanuele D’Osualdo, Alexandra Silva, and Fabio Zanasi. Henning Basold was publicity chair. CALCO was co-located with the conference Mathematical Foundations of Programming Semantics (MFPS).

At the conference were four invited talks, by Stefan Milius, Damien Pous, Grigore Rosu, and Mehrnoosh Sadrzadeh. Damien Pous and Mehrnoosh Sadrzadeh were joint invited speakers for CALCO and MFPS, and the invited talk by Damien Pous was accompanied by a special session on Coinduction organized by Damien with invited talks by Chung-Kil Hur and Andrei Popescu. There were further 20 contributed talks, of which 14 were full papers, 2 tool papers, and 6 early ideas. Areas covered included Automata, Logics, Causality, Behaviour, Categories, Graphs, and Strings. This volume collects abstracts for the four invited talks, the peer reviewed full papers, and the peer reviewed tool papers. Further details on CALCO are featured on the conference website (<https://www.coalg.org/calco-mfps-2019/calco/>).

CALCO 2019 received submissions from Argentina, Australia, Czechia, Egypt, France, Germany, Iceland, Italy, Japan, the Netherlands, Norway, Slovenia, Switzerland, the United Kingdom, and the United States. In total, there were 30 submissions, of which 21 were full papers, 2 were tool papers and 7 were early ideas submissions.

CALCO is a high-level, bi-annual conference formed by joining the forces and reputations of CMCS (the International Workshop on Coalgebraic Methods in Computer Science), and WADT (the Workshop on Algebraic Development Techniques). It provides a forum to present and discuss results of theoretical nature on the mathematics of algebras and coalgebras, the way these results can support methods and techniques for software development, as well as experience reports concerning the transfer of the resulting technologies into industrial practice. Typical topics of interest include:

- Abstract models and logics
- Algebraic and coalgebraic semantics
- Corecursion in programming languages
- Algebraic and coalgebraic methods in software and systems engineering
- Specialised models and calculi
- String diagrams and network theory
- System specification and verification
- Tools supporting algebraic and coalgebraic methods
- Quantum computing with algebra and coalgebra

CALCO can look back on a proud history: previous CALCO editions took place in Swansea (Wales, 2005), Bergen (Norway, 2007), Udine (Italy, 2009), Winchester (UK, 2011), Warsaw (Poland, 2013), Nijmegen (The Netherlands, 2015) and Ljubljana (Slovenia, 2017).

This volume first presents abstracts of the four invited talks, followed by the contributed papers and tool papers in the order they were presented at the conference. We hope that reading the contributions in this volume will be as inspirational as listening to the talks was in June 2019 in London.

October 2019

Ana Sokolova
Markus Roggenbach



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