CAMBRIDGE
UNIVERSITY PRESS

EDITORIAL PREFACE

A special issue on categorical algebras and computation in celebration of John Power's 60th birthday, part II

Masahito Hasegawa (ID), Stephen Lack and Guy McCusker

This volume is the second part of the Festschrift in honour of John Power, who turned 60 in December 2019. For a brief history of John and his work, we refer to the preface of the first volume of the Festschrift (*Mathematical Structures in Computer Science* (2021), **31**(7)).

Reflecting John's influence on category theory and its applications to computer science throughout his career, we received a number of submissions on a wide range of topics. All the submitted papers have been fully peer-reviewed to the usual standards of the journal, and we finally accepted 11 papers. Among them, four papers already appeared in the first part. This volume consists of the remaining seven papers.

We are very grateful to the authors and reviewers whose hard work was essential in preparing this special issue. We would like to thank all of them for their help and patience.

About the papers in this volume. In "A categorical view of varieties of ordered algebras", Adámek, Dostál and Velebil give a proof of the correspondence between varieties of ordered algebras and strongly finitary monads on the category of posets and show that such a monad has a presentation as a coinserter: a result closely related to work of John with Max Kelly.

The paper "The costructure-cosemantics adjunction for comodels for computational effects" by Garner investigates fundamental issues in the theory of comodels, which originates in a pioneering work by John and Olha Shkaravska.

The paper "Hom weak ω-categories of a weak ω-category" by Cottrell and Fujii concerns a fundamental issue on weak higher-dimensional categories: a functorial construction of hom weak ω-categories for each weak ω-category, building among other things on earlier joint work of the authors with John.

Two of the papers in this issue reflect John's long-standing interests in logical relations and fibrational semantics. "Bisimulation as a logical relation" by Hermida, Reddy, Robinson, and Santamaria discusses characterisations of various kind of bisimulations in terms of logical relations, with strong emphasis on the algebraic constructions of the models. In the paper "Weakest preconditions in fibrations" by Aguirre, Katsumata and Kura, the authors study the categorical structure behind Dijkstra's weakest precondition predicate transformer from a fibrational point of view.

In "String diagram rewrite theory II: Rewriting with symmetric monoidal structure", Bonchi, Gadducci, Kissinger, Sobocinski and Zanasi develop the theory of rewriting systems for symmetric monoidal theories via string diagrams, complementing John's contributions to the theory of graphical formalisms.

"Complete algebraic semantics for second-order rewriting systems based on abstract syntax with variable binding" by Hamana studies semantic models of higher-order rewriting systems using algebras over presheaves – a research direction started in the 1990s in Edinburgh under the strong influence of John.

CrossMark