

Editorial

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The present issue is composed of three contributed articles.

In “Directly reflective meta-programming,” Aaron Stump presents the Archon language, a pure lambda calculus with both call-by-value and call-by-name lambda binding, and additional primitives that internalize the mapping of terms to a meta representation which can be traversed, transformed and reflected back while preserving variable binding and scope. The Archon framework thus supports hygenic run-time meta-programming.

In “A minimalistic look at widening operators,” David Monniaux formalizes the widening operators of abstract interpretation in higher-order logic. His relaxed definition of widening is sufficient to ensure termination, and he describes its implementation in Coq.

In “A principled approach to programming with nested types in Haskell,” Patricia Johann and Neil Ghani expand on their work presented at TLCA 2007. They apply an F-algebra construction on the category of functors and natural transformations, i.e., one level higher than the category of types and functions as one does for inductive data types. Denotations of nested types then arise as fixed points of higher-order functors between functors; and folds, builds, Church encodings and the fold/build fusion rule can thus all be defined generically. Johann and Ghani then generically implement fold and build for nested types in Haskell, and prove them to be as expressive as previously known, more ad-hoc fold combinators for nested types.

We conclude this issue with a prelude to a forthcoming special issue dedicated to the memory of Peter Landin, who passed away in June 2009.

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