Kobayashi, Naoki
Type-based information flow analysis for the π-calculus. (English) [Zbl 1081.68061]

Summary: We propose a new type system for information flow analysis for the π-calculus. As demonstrated by recent studies, information about whether each communication succeeds is important for precise information flow analysis for concurrent programs. By collecting such information using ideas of our previous type systems for deadlock/livelock-freedom, our type system can perform more precise analysis for certain communication/synchronization patterns (like synchronization using locks) than previous type systems. Our type system treats a wide range of communication/synchronization primitives in a uniform manner, which enabled development of a clear proof of type soundness and a sound and complete type inference algorithm.

MSC:
68Q85 Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.)

Keywords:
inference algorithm

Software:
TyPiCal

Full Text: DOI

References:


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