

Formal Semantics

Description

Introduction: motivation, approaches to semantics definitions
Translational semantics, attribute grammars and their applications
Denotational and operational semantics of expressions
Natural semantics of imperative statements
Structural operational semantics of imperative statements
Semantics of abort, nondeterministic and parallel execution
Denotational semantics of imperative statements
Domain and fixed point theory
Semantics of functional language elements
Modeling blocks and procedures
Modeling exceptions
Full abstraction

Literature

- Hanne Riis Nielson and Flemming Nielson: Semantics with Applications - A Formal Introduction (John Wiley & Sons, 1992)
- Kenneth Slonneger and Barry L. Kurtz: Formal Syntax and Semantics of Programming Languages (Addison Wesley Longman, 1995)
- Glynn Winskel: The Formal Semantics of Programming Languages - An Introduction (Foundations of Computing Series, MIT Press, 1993)
- John C. Reynolds: Theories of Programming Languages (Cambridge University Press, 1998)