Abstract

In this paper, we document three type assignment systems and prove their completeness through filter models. We clarify several ambiguity in the proof, and reconstruct the cut-elimination proof in the union type theory. Our main focus is on the union type assignment system in which several definitions and proofs are inconsistent in the original paper. We also construct a sequent calculus system for the type theory of the intersection type assignment system, and find out that quasi-cut rule is necessary to prove that the cut elimination holds in that system.

Keywords: Type assignment system; Lambda calculus; Cut-elimination