Intermediate Logics: From Hypersequents to Concurrent Computation

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We provide a general proof-theoretic framework connecting logic and concurrent computation. We describe an algorithm for introducing analytic calculi in a uniform and systematic way for a large class of logics [4]. Our calculi use hypersequents, which are sequents working in parallell [3]. Reformulated first as natural deduction systems [7,5,6], the introduced hypersequent calculi are employed to provide a concurrent computational interpretation for many intermediate logics, classical logic included [1,2].

We use the CurryHoward correspondence to obtain new typed concurrent λ-calculi, each of which features a specific communication mechanism and implements techniques for handling and transmitting process closures.

References

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