A formalization of CRWL in the Isabelle proof assistant

Error: Macro TOC(None) failed

```
'NoneType' object has no attribute 'endswith'
```

Modern functional-logic programming languages like Toy or Curry feature non-strict non-deterministic functions that behave under call-time choice semantics. A standard formulation for this semantics is the CRWL logic, that specifies a proof calculus able to compute the set of values corresponding to each expression. Here we present a formalization of that calculus in the Isabelle/HOL proof assistant, and our Isabelle proofs of some basic properties of CRWL: closedness under c-substitutions, polarity and compositionality. We also discuss some insights that have been gained, such as the fact that left linearity of program rules is not needed for any of these results to hold.

Isabelle source

The Isabelle code for this results can be downloaded from here .

Isabelle documentation

The Isabelle generated HTML-documentation and pdf for CRWL theories can be found here .

Papers

"A Formalization of the Semantics of Functional-Logic Programming in Isabelle"

- ◊ Original version
- ◊ Extended version
- ◊ slides

Contact

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