Lambda Calculi With Explicit Substitutions

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Preliminaries

- Slides and Examples available at:
  https://github.com/donovancrichton/Talks
- This talk: BFPG/LambdaCalculiWithExplicitSubstituions

About me

Australian National University

- PhD Candidate
- Computing Foundations
- School of Computing

Griffith UNIVERSITY

- Visiting Scholar
- Trusted Systems Lab
- IIIS

ASD AUSTRALIAN SIGNALS DIRECTORATE

- ASD Co-Lab Scholar

This is a test defΣ.

A test definition for some concept.

This is a test example.

An example for some concept.

The Identity Function

```
f : a -> a
f x = x
```

The Problem

Implementation Gap

There is usually a non-trivial disconnect between how lambda calculus is presented in mathematics, to how it is implemented in a programming language.

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Formal Reasoning

Substitution in traditional presentations of lambda calculus is a meta operation, which makes formal reasoning about it difficult.
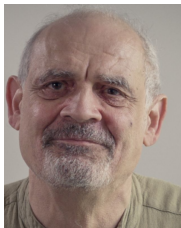
Explicit Subsitutions (Paper)

Martin Abadi   Luca Cardelli   Pierre-Louis Curien   Jean-Jacques Levy

References