Jason Reed

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Education

B.S. Computer Science and B.S. Mathematics, Carnegie Mellon University, 2002.

GPA: 4.0

Ph.D. Computer Science, Carnegie Mellon University, *expected* 2009.

THESIS PROPOSAL: A Hybrid Logical Framework

Implementation in SML, modifications of existing Twelf system

Committee: Frank Pfenning (chair), Karl Crary, Robert W. Harper, and Rajeev Goré.

Employment

JUSTSYSTEM PITTSBURGH RESEARCH CENTER (1999-2000) Perl and C programming maintaining research paper database system miscellaneous machine learning algorithms, and associated tools.

WHIZBANG LABS (2000-2002) Java programming implementing machine learning algorithms, Markov random fields.

Teaching

15-354 COMPUTATIONAL DISCRETE MATHEMATICS TA under Klaus Sutner. Responsibilities included grading, office hours.

15-312 PRINCIPLES OF PROGRAMMING LANGUAGES TA under Frank Pfenning. Responsibilities included assignment design, recitation lectures, grading, office hours.

Research

Interests

Automated reasoning, Logical frameworks, Substructural logics, Modal logics, Proof irrelevance, Dependent types, Proof checking algorithms, Unification, Focusing proof search.

Work in Progress

A Hybrid Metalogical Framework (PhD Dissertation, 2009)

Embedding Nominal Logic in HLF (with R. Harper)

Proof Irrelevance in a Logical Framework (with F. Pfenning)

Published Work

Intuitionistic Letcc via Labelled Deduction. With F. Pfenning, in *Methods for Modalities* (M4M'07).

Hybridizing a Logical Framework. In *Hybrid Logic* (HyLo'06).

Redundancy Elimination for LF. In *Logical Frameworks and Meta-Languages* (LFM'04)

Extending Higher-Order Unification to support Proof Irrelevance. In *Theorem Proving in Higher-Order Logics* (TPHOLs'03)

Higher-Order Pattern Unification and Proof Irrelevance. In *Theorem Proving in Higher-Order Logics* (TPHOLs'02, in NASA tech report CP-2002-211736)

Proof Irrelevance and Strict Definitions in a Logical Framework (Senior Thesis, published as CMU tech report CMU-CS-02-153)

Selected Unpublished Work

(Available at `http://www.cs.cmu.edu/~jcreed/papers/`)

A Constructive Approach to the Resource Semantics of Substructural Logics (with F. Pfenning, Submitted to CSL), 2009

A Judgmental Deconstruction of Modal Logic, 2009

Focalizing Linear Logic in Itself, 2008

Names are (mostly) Useless. Talk given at *Workshop on Mechanized Metatheory* (WMM'08)

Higher Order Constraint Simplification in a Dependent Type Theory, 2008

A Hybrid Metalogical Framework, Thesis Proposal, 2007

Recursive Datatypes and Diamond Inference, 2001

Formalizing the Construction of Exponentials in an Elementary Topos, 2001

Awards

Fellowships

Research fellowship from Fundação para a Ciência e Tecnologia, Portugal, 2007-2009.

Honorary Societies

Phi Beta Kappa, 2002.

Phi Kappa Phi, 2002.

Languages

In rough order of preference and experience: ML family (principally SML), C, Java, C++.