

[12pt]article

asmath

An analysis on the invariance of λ -calculus Haileselassie Gaspar

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Abstract The notion of lambda calculus has been with us since -citation needed-, and it has had an significant impact on the field of computability and eventually, functional programming. One of the main reasons for this, is the fact that certain reduction strategies in Introduction

Lambda Calculus We write $M, N, P...$ to denote arbitrary λ -terms, $x, y, z...$ to denote variables and the set of λ -terms Λ is inductively defined as: equation aligned $x \in \Lambda$

Proof Overview As stated before the measure employed to analyze the time invariance of lambda calculus, or, said differently, its universality, is the number of transitions in a turing machine. If the implementation introduced in Beta reduction invariance Paper citation – is correct, then by means of the Linear Substitution Calculus, it is possible to represent even size-exploding terms in Turing machines. The proof will be dividied into two sections, and this paper will focus on the implementation of the first in Haskell.