Formalization of the Denotation Semantics of Automatic Differentiation in Coq
Project Proposal

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1 Introduction

AI and machine learning research has sparked a lot of new interest in recent times due to its many applications and ability to solve very difficult problems.

2 Background

2.1 Automatic Differentation

2.2 Coq

2.3 Denotation Semantics

2.3.1 Domain Theory

3 Preliminary Results

3.1 Preliminary Proof

3.2 Proof Extension

4 Timetable and Planning

4.1 Deadlines

4.2 Fill in missing holes

4.3 Generalize prototype for variants and recursive types