

A theory about typed parsers

Lycée Alain René Lesage

Enogad Le Biavant–Frédéric

Today

Contents

1	Introduction	2
1.1	Abstract	2
	Acronyms	3
2	Conclusion	4

Chapter 1

Introduction

1.1 Abstract

This article is a consequence of me doing some researches about the compilation process steps, when I suddenly stumbled across a visualization of the Hindley-Milner type inference algorithm, which resembles the way bottom-up parsers parse context-free grammars. This is when I got the idea of combining parsing and type inference, and then formalize the process in this article. This article is divided in three steps. The first one aims to present a Proof Of Concept of a working parser-type inferer on a context-free lisp-like grammar, using a Recursive Descent Parser and Hindley-Milner type inference algorithm. The second part then tries to formalize the preceding section and lastly the third part tries to prove/address which grammars can use this system.

Acronyms

HM Hindley-Milner. 2

RDP Recursive Descent Parser. 2

Chapter 2

Conclusion