Fully automatic Lua binding for C based on compiler AST

(Automatyczne generowanie bindingu z języka C do Lua na podstawie drzewa AST)

Mateusz Łuczyński

Praca licencjacka

Promotor: dr Piotr Witkowski

Uniwersytet Wrocławski
Wydział Matematyki i Informatyki
Instytut Informatyki

28 marca 2025

Abstract

...

Streszczenie

...

Contents

Chapter 1

Introduction

1.1 Project background

1.2 Motivation

Chapter 2

Lua C API overview

2.1 Core concepts

2.2 Calling C functions from Lua scripts

2.3 Obstacles and limitations

Chapter 3

AST generated by the compiler

3.1 Example overview based on the *gcc* compiler

Chapter 4

Parsing the AST

4.1 Goal and the output format

4.2 Function arguments and their types

4.3 Handling user defined data structures

4.4 Function pointers

Chapter 5

Generating the binding code

5.1 Fetching the arguments

5.1.1 Simple types

5.1.2 C structs and unions

5.1.3 Callbacks and closures

5.2 Error handling

5.3 Exposing the interface

Chapter 6

Example usage

Chapter 7

Conclusion

7.1 Possible further development