

the Husky Programming Language

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Abstract

1 Introduction

The origin of Husky project dates back to 2017 Spring when Xiyu Zhai wanted to find a theory that explains the success of deep learning in computer vision. After two years of pointless search of a meaningful theory, it occurs to him that deep learning might not be the best form of computation, then he worked for a year with Sasha Rakhlin and Piotr Indyk to find a more efficient model from algorithmic point of views. However, the progress was slow because it was hard to formulate things properly in pure theory. Then Xiyu Zhai went on himself to do some experiments first to confirm some theoretical assumptions. It was then realized (two years ago) that there are some geometric algorithms that could potentially be used to create models that are much more efficient than deep learning with the additional benefits of being fully explainable. However, it turns out that existing programming languages are not good enough for implementing these models. Xiyu Zhai worked on himself for more than two years and created the prototype for a new powerful programming language called husky. It turns out that husky can do much more than just machine learning in computer vision. Then a team of collaborators is formed to work on husky to take it to its full potential:

All of us contribute to the improvement of language design so that husky shines as a general purpose programming language in various domains.

2 Husky By Example

3 Type System

4 Configurable Compilation

5 Incremental Evaluation

6 Package Management

7 Authors' Contributions

- Xiyu Zhai is responsible for most of the implementation of husky language
- Teng Geng is the main contributor to Corgi, the package manager of husky
- Yonghao Jin tests husky in various domains
- Jian Qian and Haochuan Li helps a lot in the early days of writing tutorials and documentation...
- Jiang Xin helps with internal implementation and system level optimization

¹* alphabetical order for now