Advanced R project
FullyLight: Keras-like Neural Network Classifier

Speaker: Kunhong Yu(444447)

Faculty of Economic Sciences
University of Warsaw

09/06/2022

Uniwersytet Warszawski
Wydział Nauk Ekonomicznych

Contents

I. Introduction

Motivation

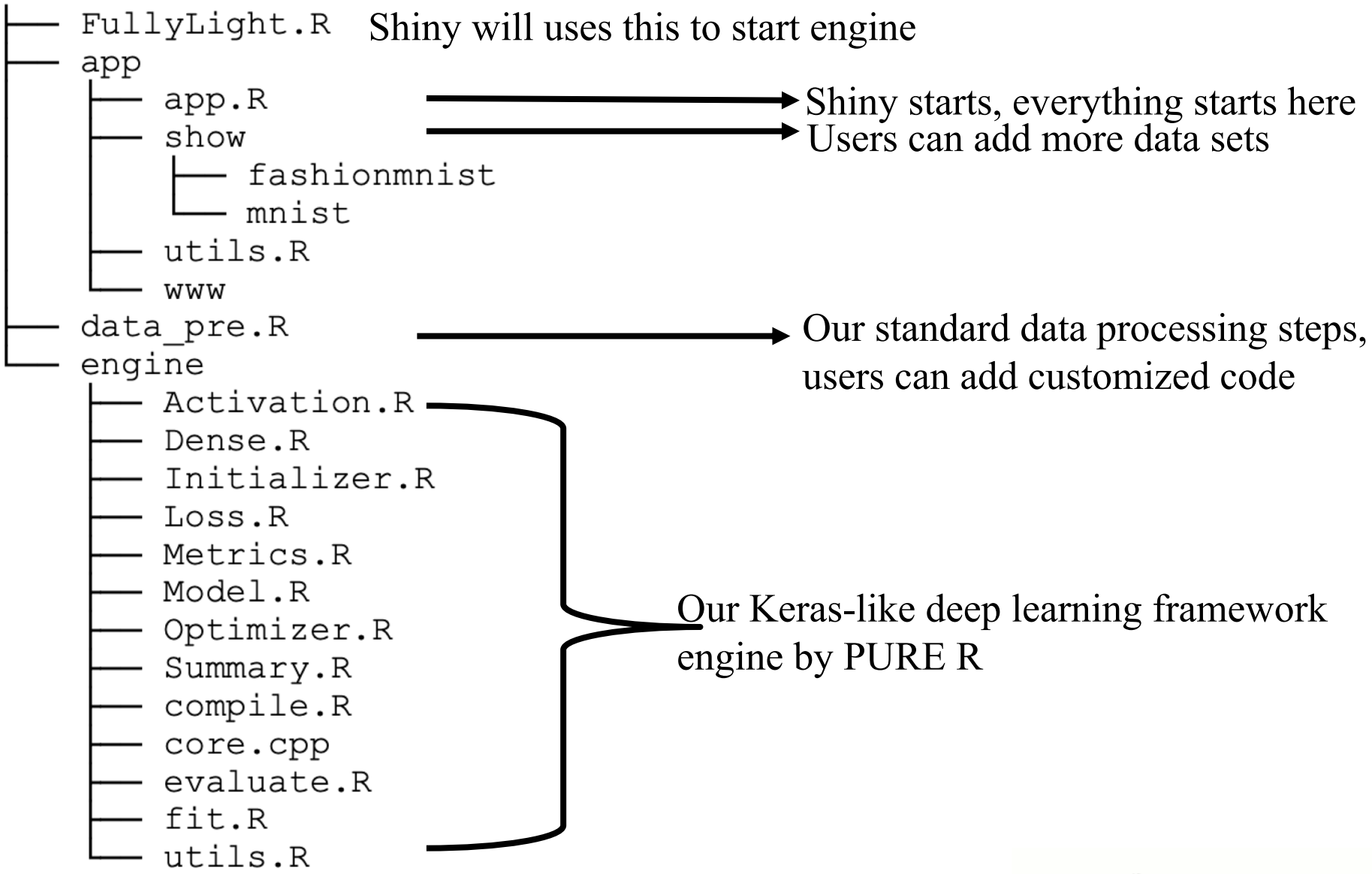
- Keras, Tensorflow, Torch, MxNet, PaddlePaddle, …
- Deep Learning Framework
- Computation Graph – No need to compute backward pass
- Train/test model using simple interfaces

TODO

- Mimic behavior of Keras
- Build Fully-Connected Network framework for classification
- Compute forward pass and backward pass efficiently
- Visualization by Shiny

II. Code Organization

Code Organization



III. Methods

Data

- Image: MNIST/FashionMNIST
- Structured data: Random/Iris/Mtcars/Scat/Yeast/Random

R Techniques

- Shiny to visualize
- Engine: defensive programming/C++/Vectorization/S4 class/functions, etc.
- Data preprocessing: defensive programming/Vectorization/ functions/dtplyr/dplyr/purrr, etc.
- Rest: At least three of above
- Package library(FullyLight)
- …

IV. Demo

Demo to show

Github link

YouTube link

Thank you!