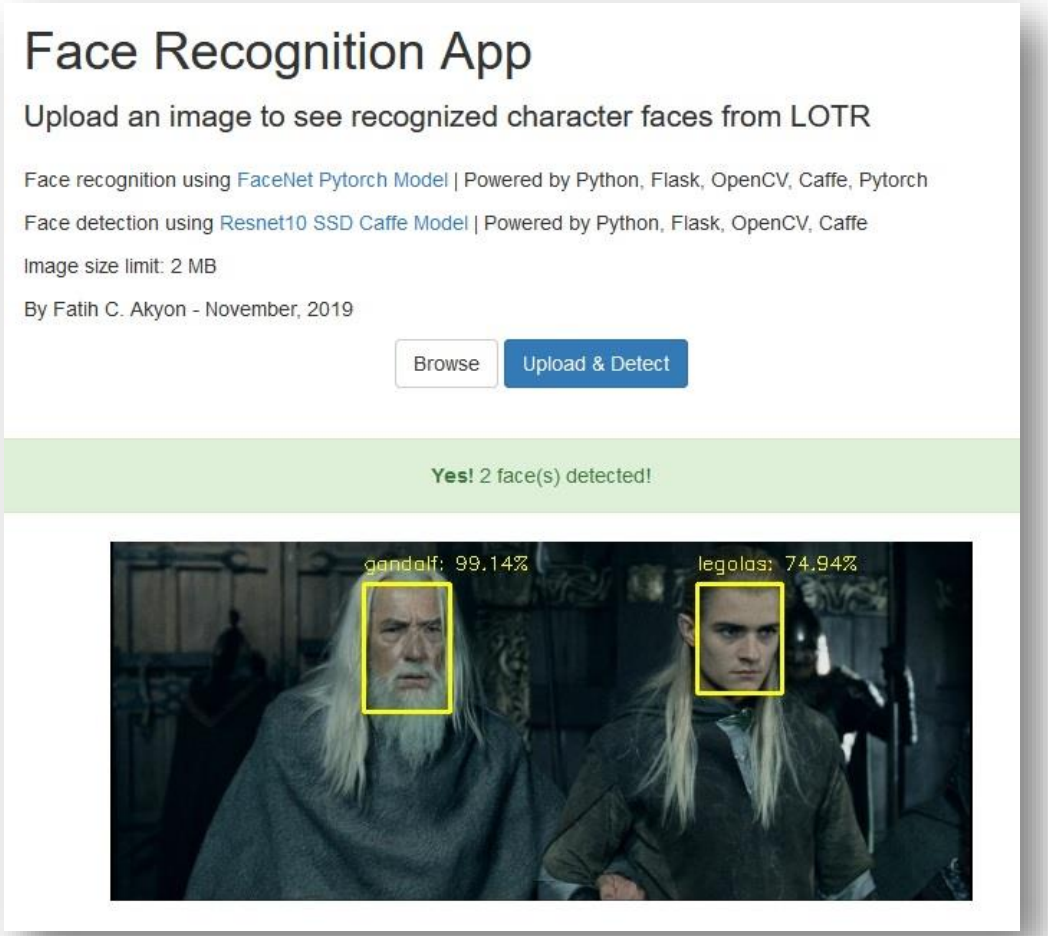
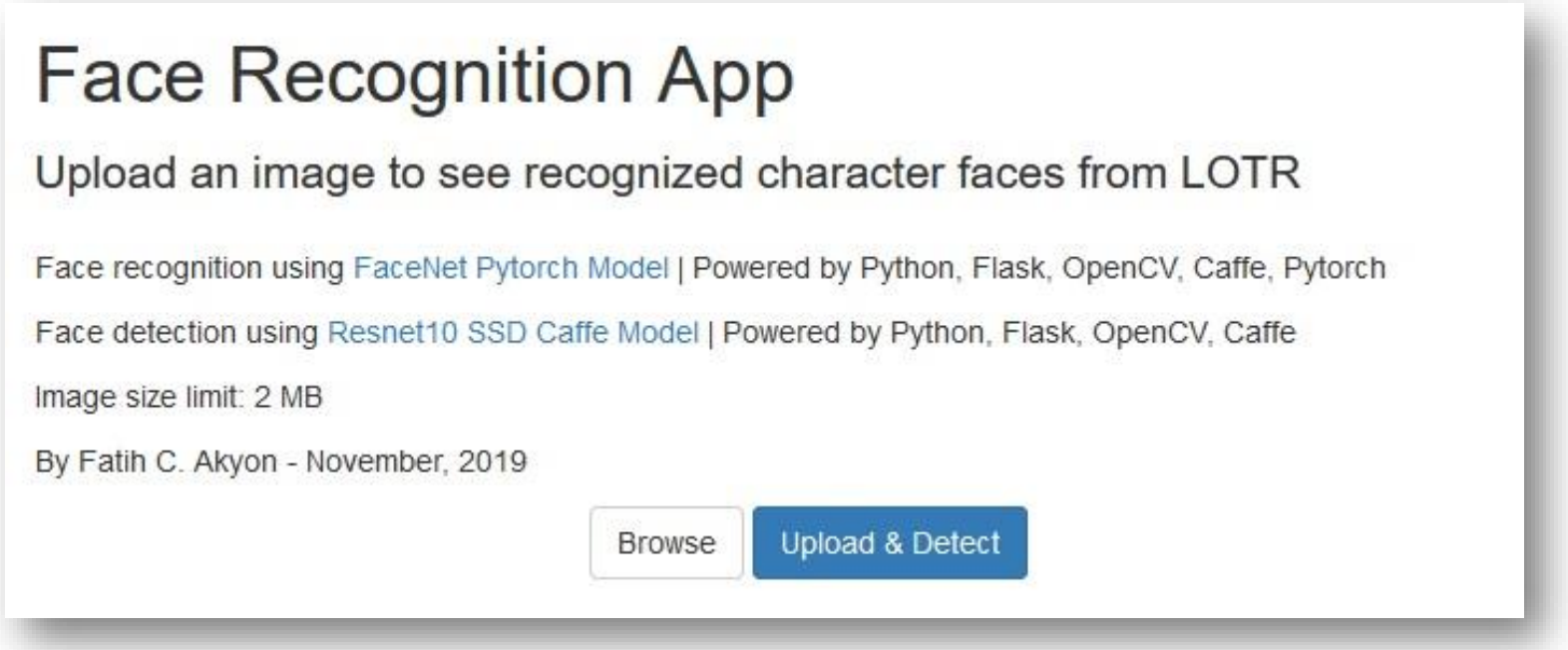
Face Recognition Web App Tutorial

by Fatih Cagatay Akyon



Web App Preview

- Live demo URL: https://face-recognition-api-flask.herokuapp.com/



Who Am I

Fatih Cagatay Akyon

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

Bilkent University

aselsan

KUARTIS

10+ IEEE papers
5 patents

- Machine Learning
- Deep Learning
- Computer Vision
- Object Detection
- Radar Signal Detection
- Modulation Classification

linkedin.com/fcakyon

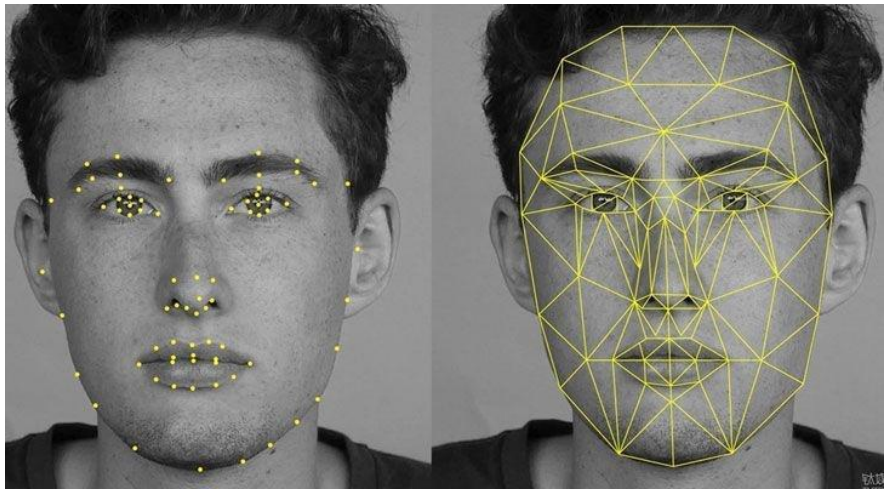
fcakyon@gmail.com

Outline

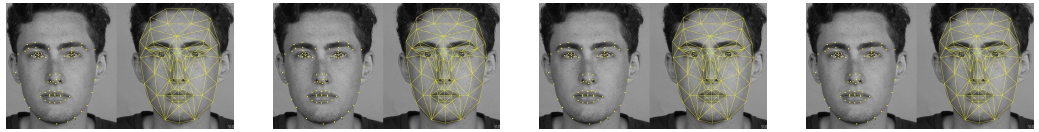
- Facial feature extraction
- SVM, Naïve Bayes, Multi Layer Perceptron
- LOTR Dataset
- Local project structure
- Online project structure
- Pushing our app to Github
- Deploying our app to AWS via Heroku

Traditional face recognition

- Extract features



- Store them in a db

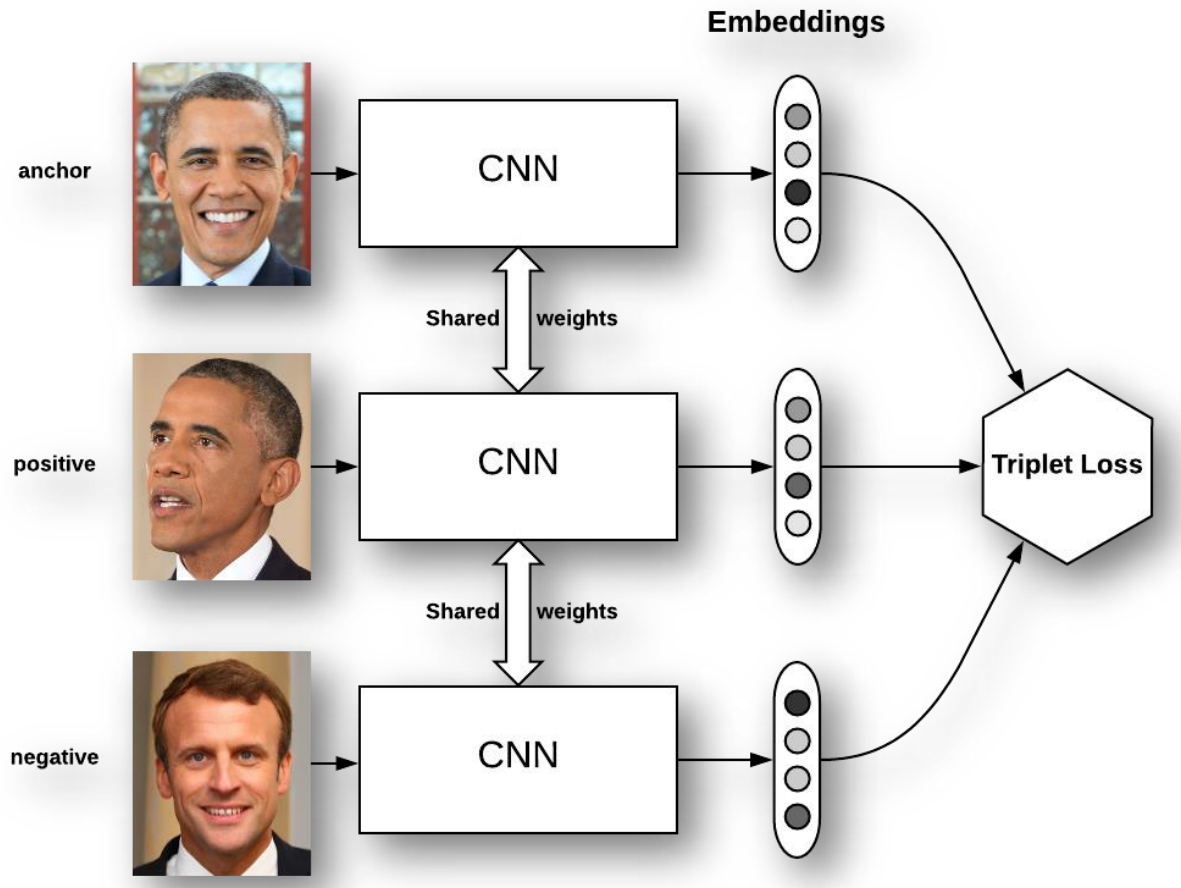


User A User B User C User D

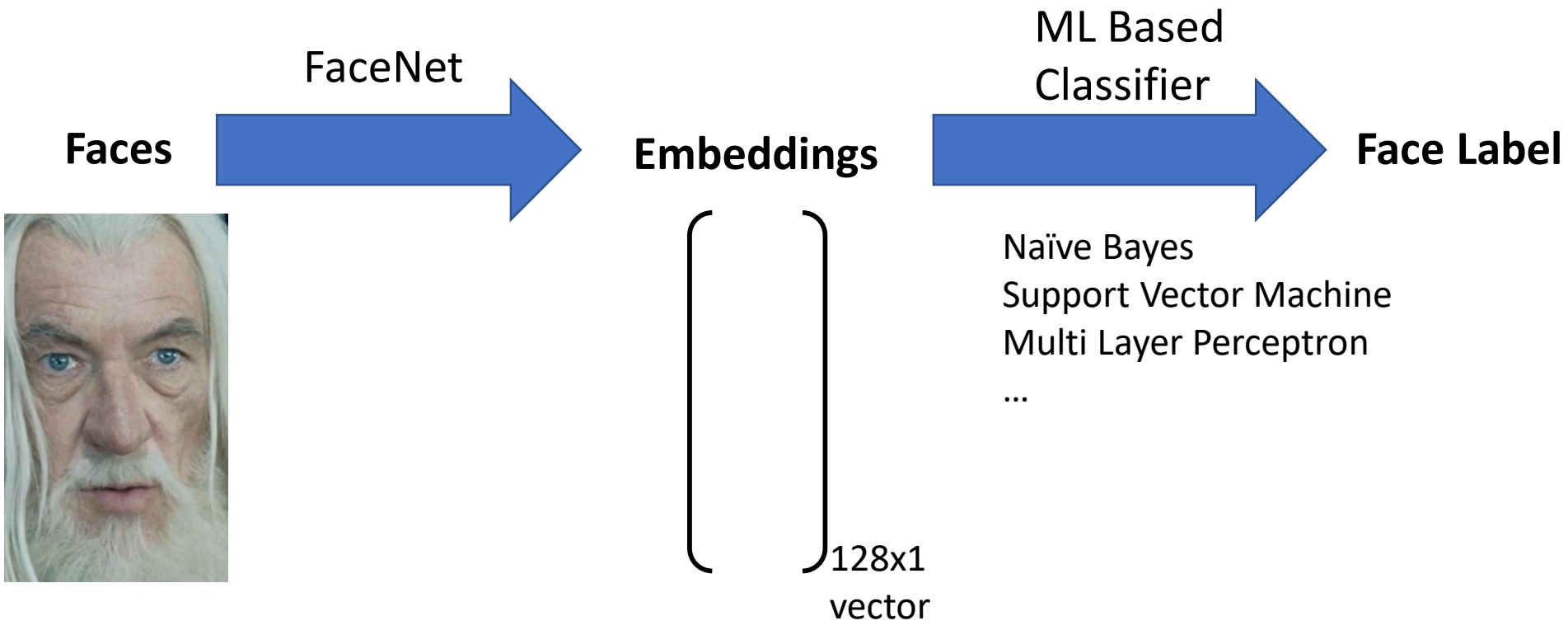
- Compare new face features with db

Deep learning based facial embedding extraction

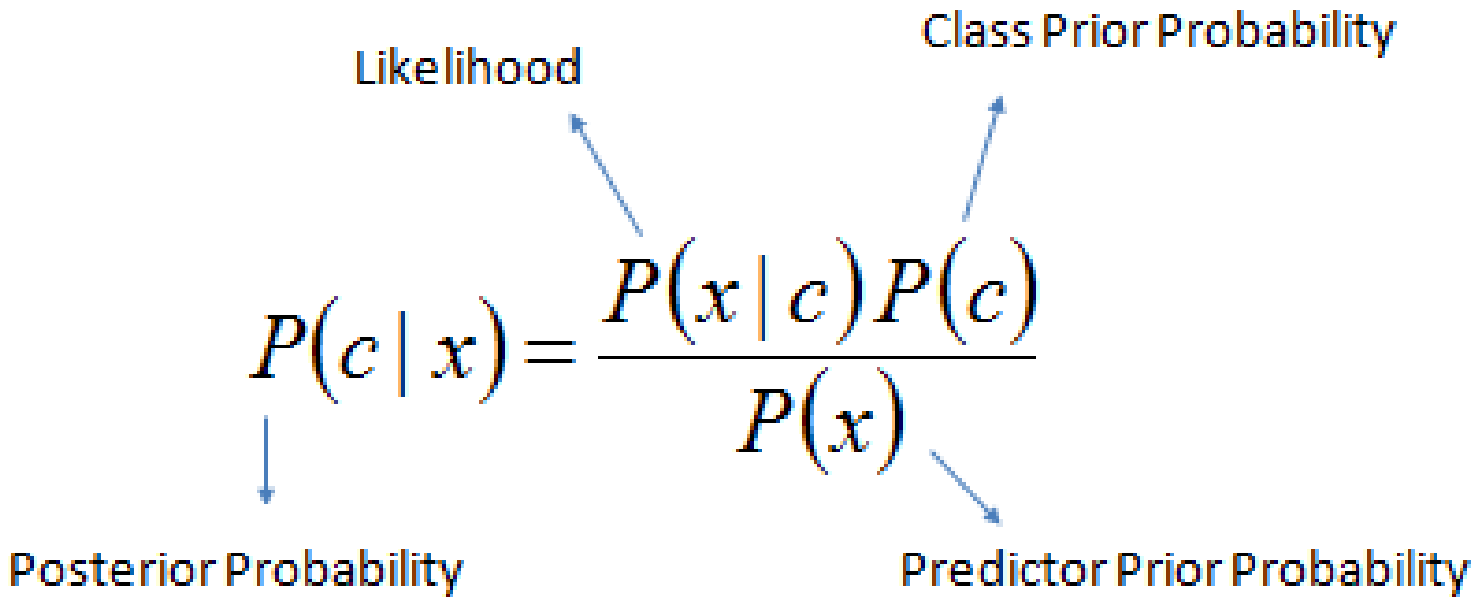
Paper url: https://www.cv-foundation.org/openaccess/content_cvpr_2015/app/1A_089.pdf



ML based face recognition

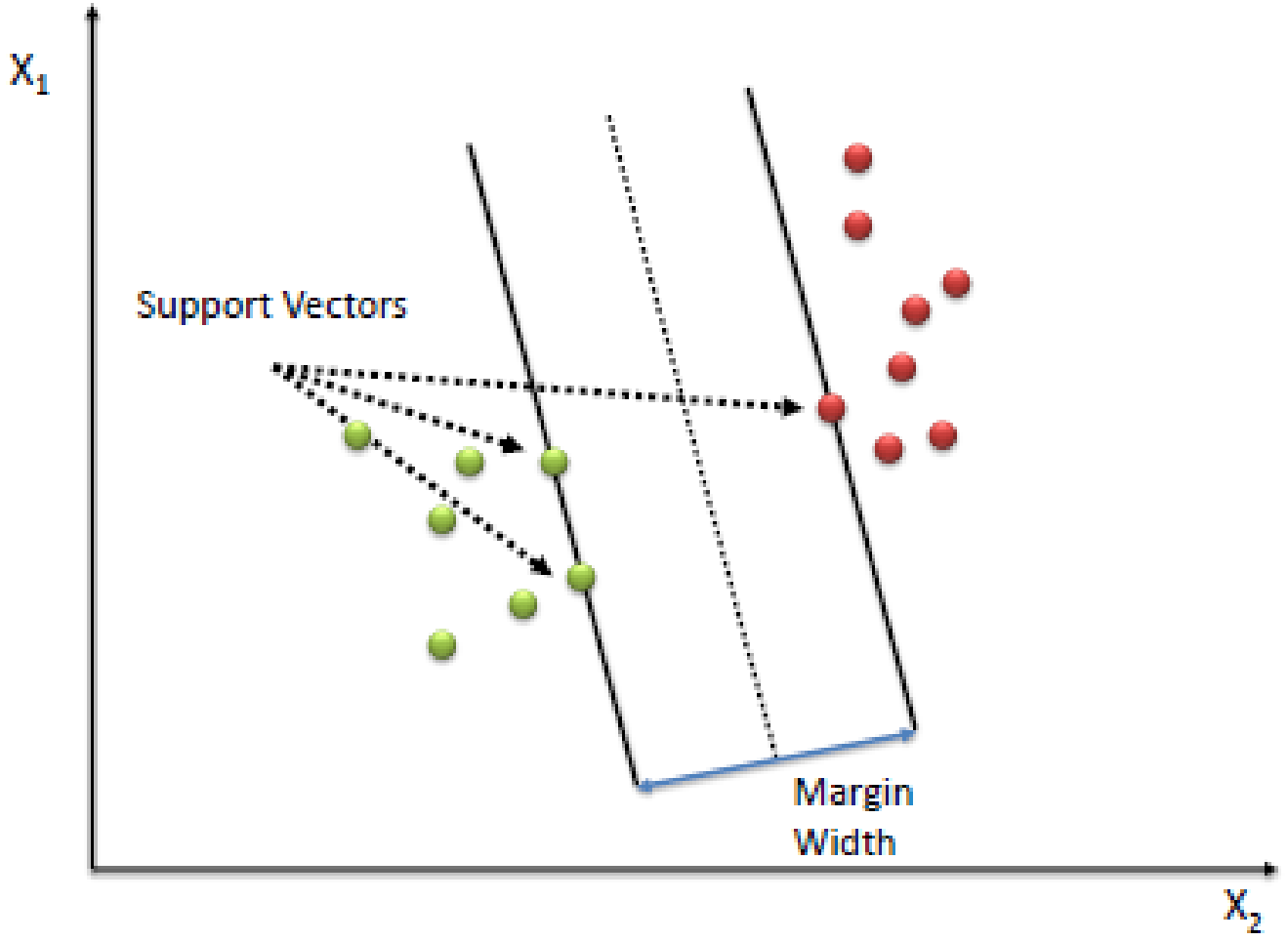


Naïve Bayes

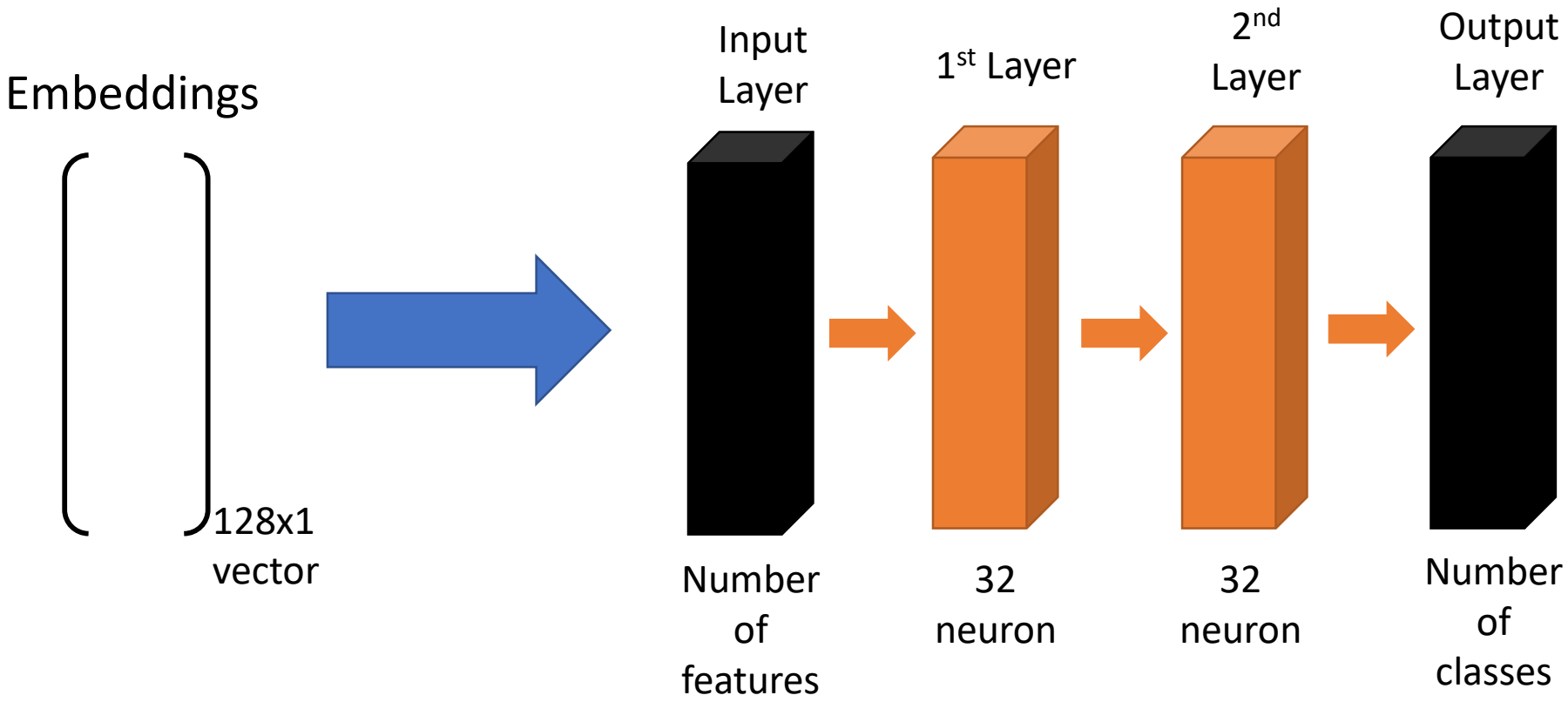


$$P(c \mid X) = P(x_1 \mid c) \times P(x_2 \mid c) \times \cdots \times P(x_n \mid c) \times P(c)$$

Support Vector Machine



Multi Layer Perceptron

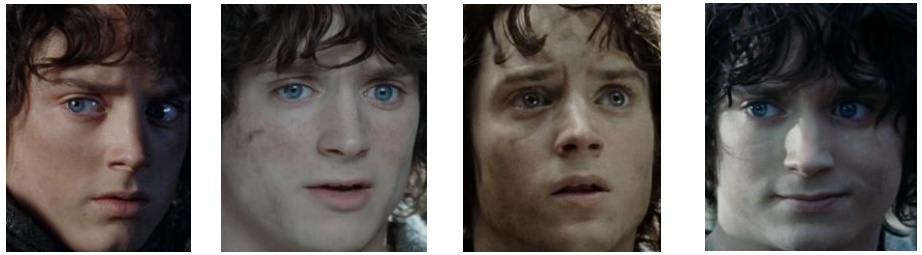


LOTR Dataset

Face detection/ Examples classes

Aragorn

Frodo



Gandalf

Gollum

Legolas

Saruman

Independent test set




Local project structure