



JavaScript API for Face Recognition in the Browser

Lightening Talk – Hardeep Arora

About Me

18+ years experience in Banking and Finance (MBA Finance, B.E. Computers)

Have worked as Developer, DBA, Data Scientist, and Leading Analytics functions at Bank.

Have delivered Data Warehouses and BI platforms for banks.

Have worked in Marketing Analytics

Currently Heading COE AI/Analytics @ Accenture focusing on Finance and Risk domain in ASEAN region.

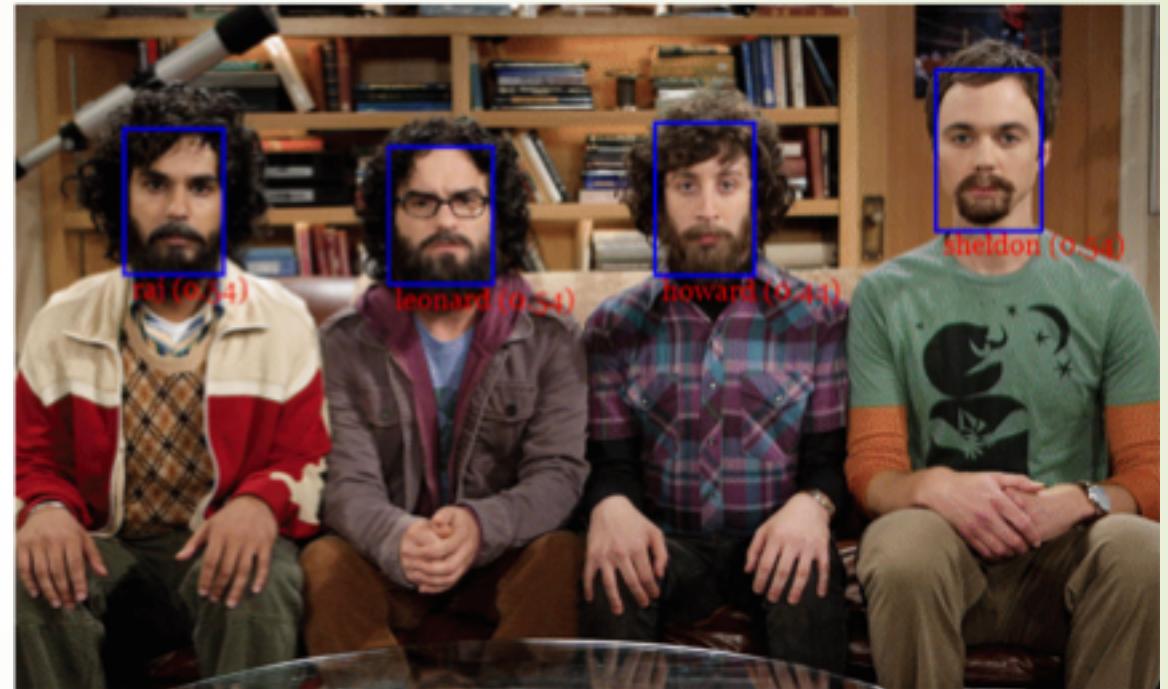
Advisor for some startup's on AI Strategy

Work Life : Credit Risk and Financial Crime

Night Life : Deep Learning, Blockchain, AGI, Kaggle

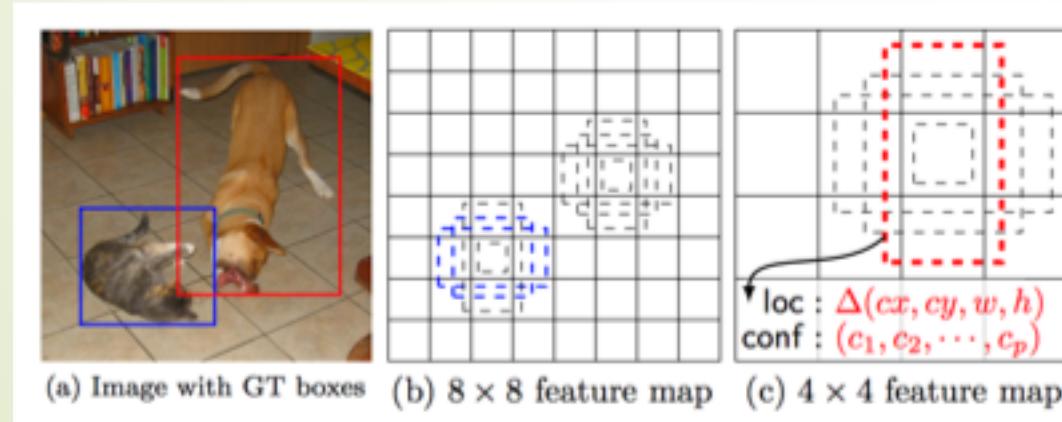
Face-api.js

- ▶ This is a new module build on top of tensorflow.js core, which implements three types of **CNNs** to
- ▶ Face detection,
- ▶ Face landmark detection
- ▶ Face recognition



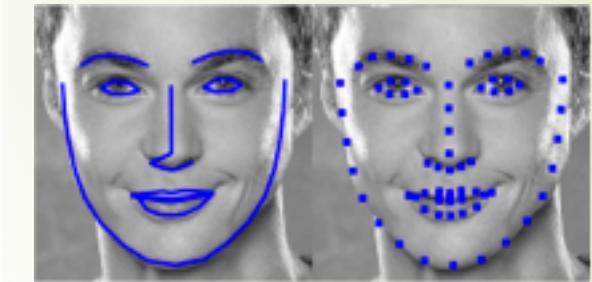
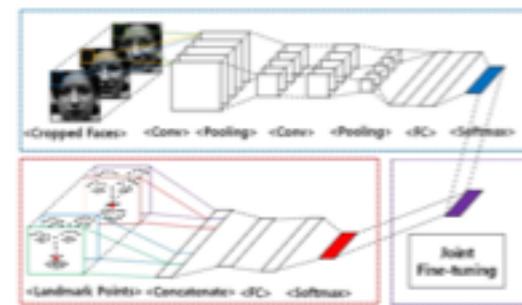
Face Detection

- ▶ **SSD** (Single Shot Multibox Detector), which is basically a **CNN** based on **MobileNetV1**, with some additional box prediction layers stacked on top of the network



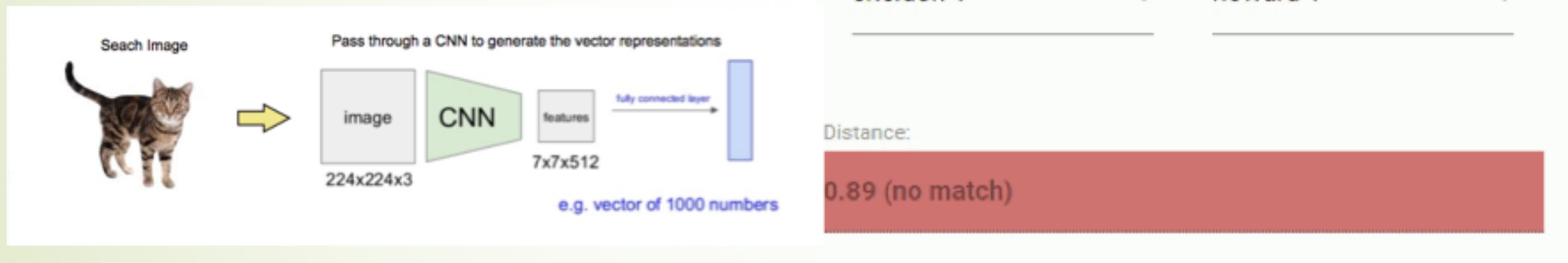
Face Landmark Detection and Face Alignment

- ▶ Simple CNN, which returns the **68 point face landmarks** of a given face image
- ▶ From the landmark positions, the bounding box can be centered on the face



Face Recognition

- ▶ ResNet-34 to generate Face Embedding Vector of size 128.
- ▶ Euclidean distance between two face descriptors and judge whether two faces are similar based on a **threshold value**.



Demo

- ▶ Code - <https://github.com/iustadudewho hacks/face-api.js>
- ▶ Blog - <https://itnext.io/face-api-is-javascript-api-for-face-recognition-in-the-browser-with-tensorflow-is-bcc2a6c4cf07>