One of Facebook open source frameworks

Pythia

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I. Introduction & contexte

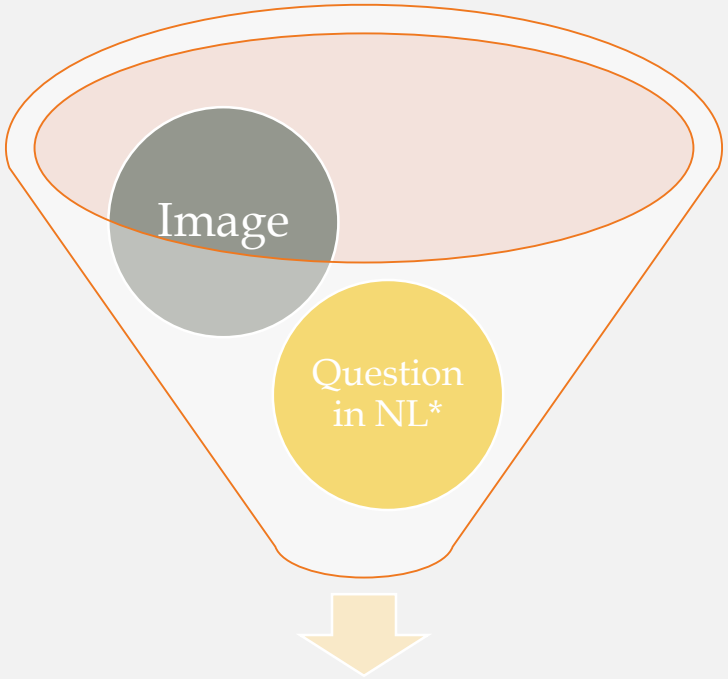
I. Introduction & contexte

Veille technologique :

Article sur Facebook IA : Lien vers l'article

I. Introduction & contexte
1. VQA

Visual Question Answering:



Answer in NL*

*NL : Natural Language

https://tryolabs.com/blog/2018/03/01/introduction-to-visual-question-answering/

I. Introduction & contexte
2. Image Captioning

Image Captioning:

the process of generating textual description of an image, using :

- NLP
- Computer Vision

"man in black shirt is playing guitar."

"construction worker in orange safety vest is working on road."

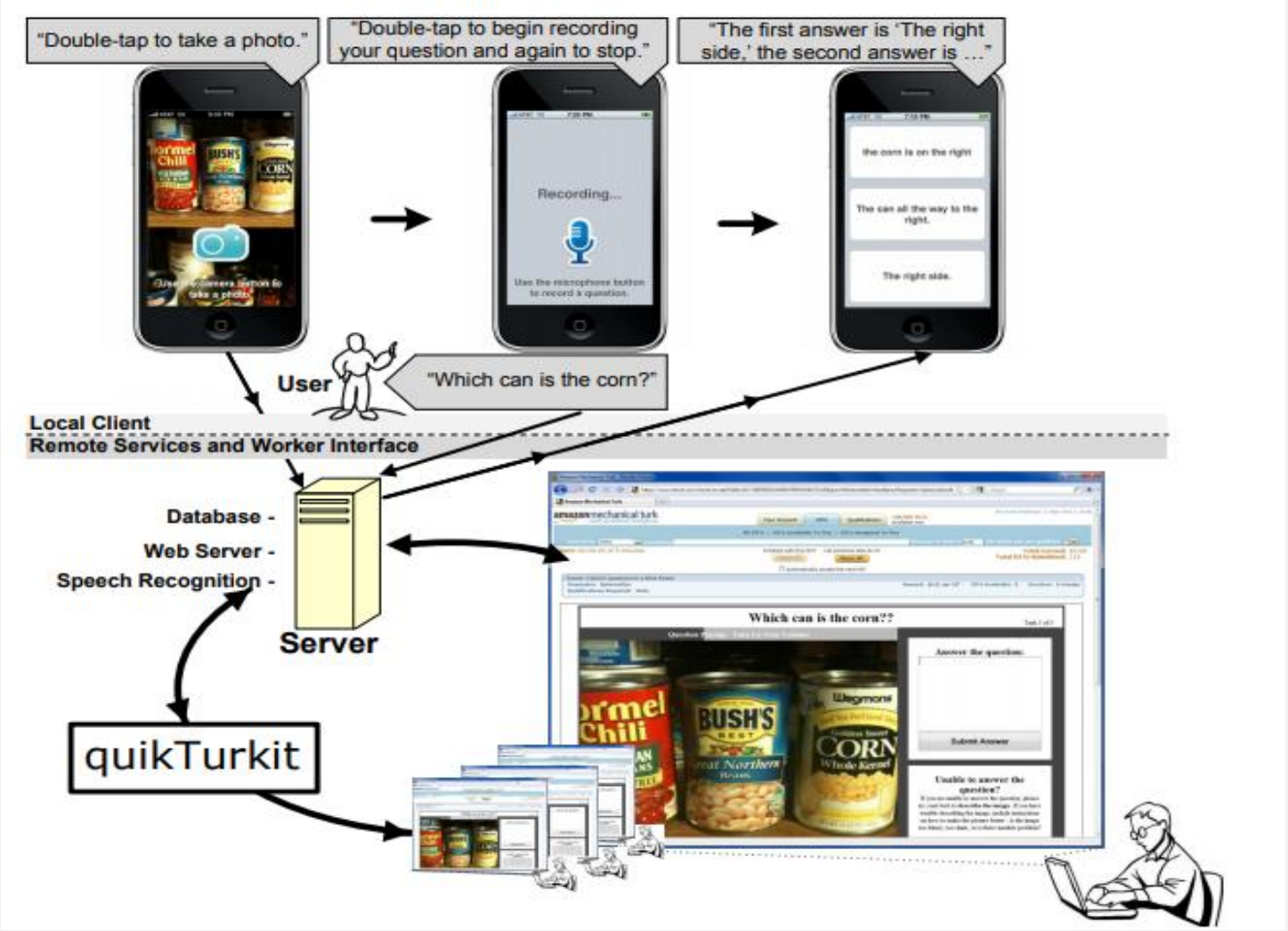
"two young girls are playing with lego toy."

https://towardsdatascience.com/image-captioning-in-deep-learning-9cd23fb4d8d2

I. Introduction & contexte
3. Use case : an artificial eye to blind

[Be my eye TEDx copenhagen]

VizWiz mobile application on iphone



http://up.csail.mit.edu/other-pubs/vizwiz.pdf

I. Introduction & contexte
3.Demo

Demo

II. Pythia

II. Pythia
0. avant-propos

Cornell University :

Pythia v0.1: the Winning Entry to the VQA Challenge 2018

Yu Jiang, Vivek Natarajan, Xinlei Chen, Marcus Rohrbach, Dhruv Batra, Devi Parikh

(Submitted on 26 Jul 2018 (v1), last revised 27 Jul 2018 (this version, v2))

This document describes Pythia v0.1, the winning entry from Facebook AI Research (FAIR)'s A-STAR team to the VQA Challenge 2018.
Our starting point is a modular re-implementation of the bottom-up top-down (up-down) model. We demonstrate that by making subtle but important changes to the model architecture and the learning rate schedule, fine-tuning image features, and adding data augmentation, we can significantly improve the performance of the up-down model on VQA v2.0 dataset -- from 65.67% to 70.22%.
Furthermore, by using a diverse ensemble of models trained with different features and on different datasets, we are able to significantly improve over the 'standard' way of ensembling (i.e. same model with different random seeds) by 1.31%. Overall, we achieve 72.27% on the test-std split of the VQA v2.0 dataset. Our code in its entirety (training, evaluation, data-augmentation, ensembling) and pre-trained models are publicly available at: this https URL

ecognition (cs.CV)

or this version)

Bibliographic data

[Enable Bibex (What is Bibex?)]

Submission history

From: Yu Jiang [view email]
[v1] Thu, 26 Jul 2018 04:57:43 UTC (96 KB)
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Which authors of this paper are endorsers? | Disable MathJax (What is MathJax?)

https://arxiv.org/abs/1807.09956

II. Pythia
1. Présentation

Pythia :

a deep learning framework for Visual Question Answering VQA

Built on the top of PyTorch.

https://jaxenter.com/deep-learning-pythia-facebook-158935.html

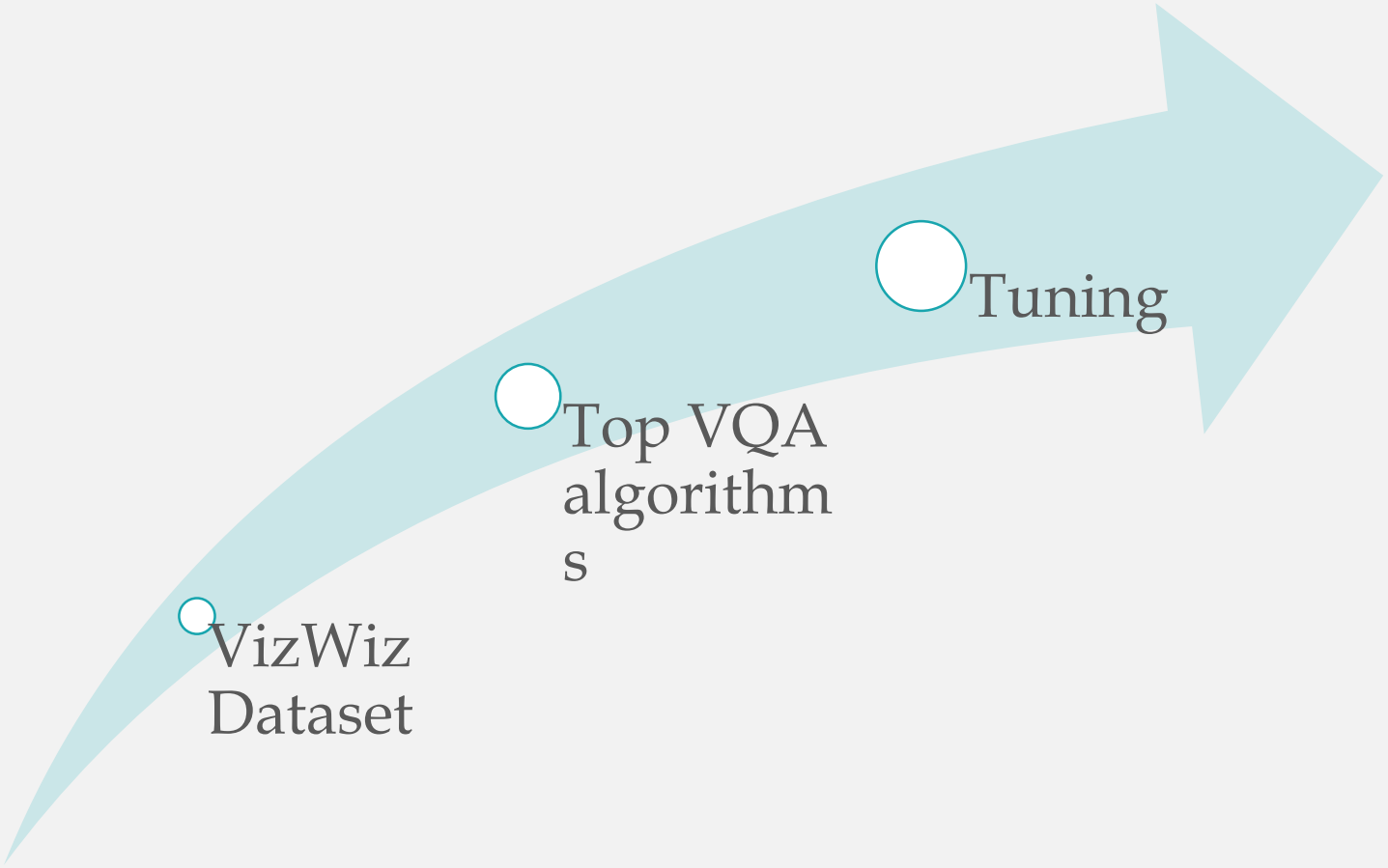
I. Pythia
2. Behind the scene : algorithms and models

Les features les plus importantes dans Pythia :

- **Model Zoo:** LoRRA, the Pythia model, and BAN.
- **Distributed**
- **Multi-tasking**
- **Customizable (losses, metrics…)**
- **Modules (layers)**

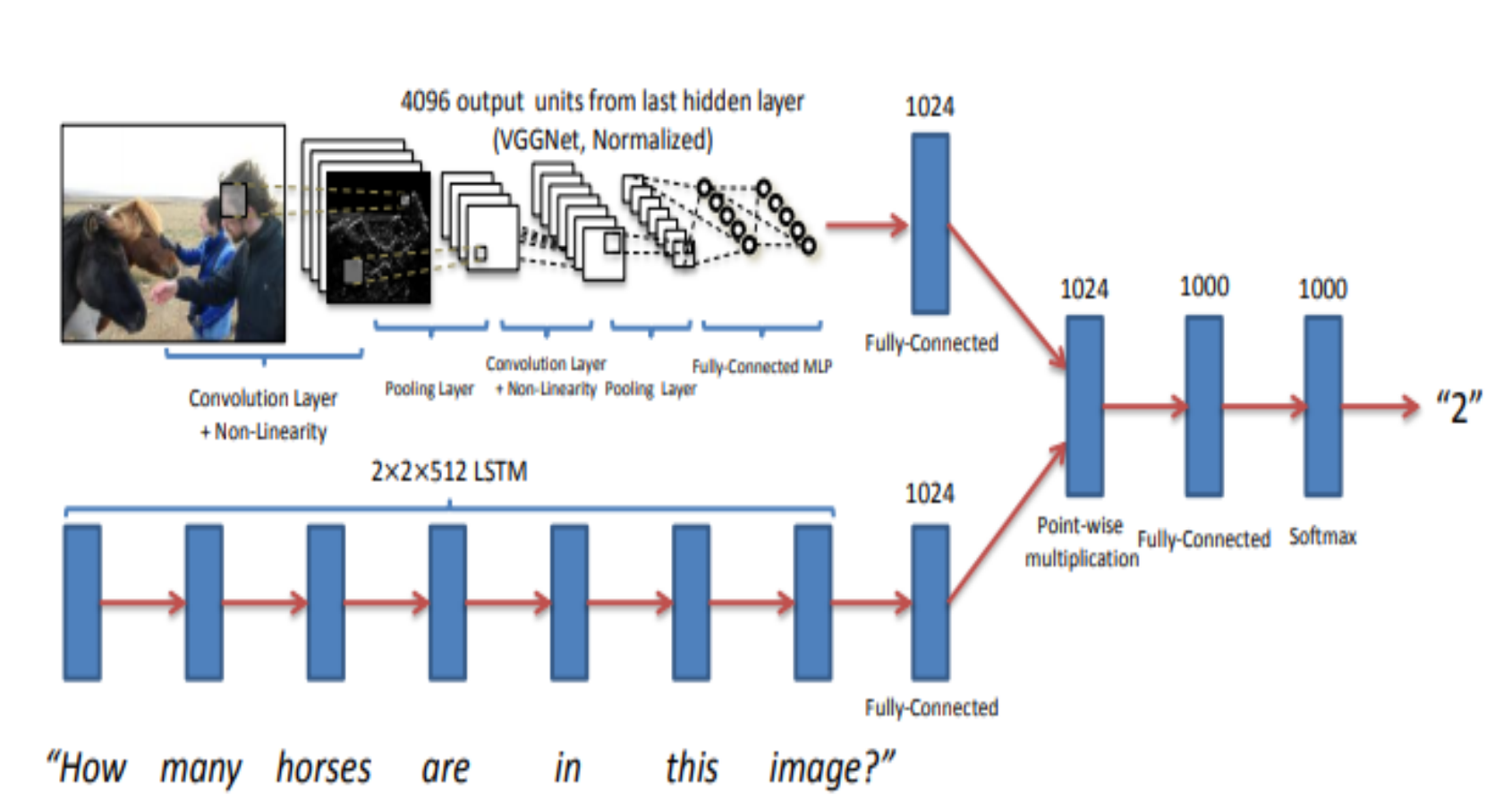
https://jaxenter.com/deep-learning-pythia-facebook-158935.html

I. Pythia
2. Behind the scene : algorithms and models
a. Focus on Pythia Model



I. Pythia
2. Behind the scene : algorithms and models
b. Top VQA algorithms

- KNN
- LSTM
- BoW
- ResNet
- ….



https://arxiv.org/pdf/1505.00468.pdf

I. Pythia
2. Exemple : notebook Colab

Notebook

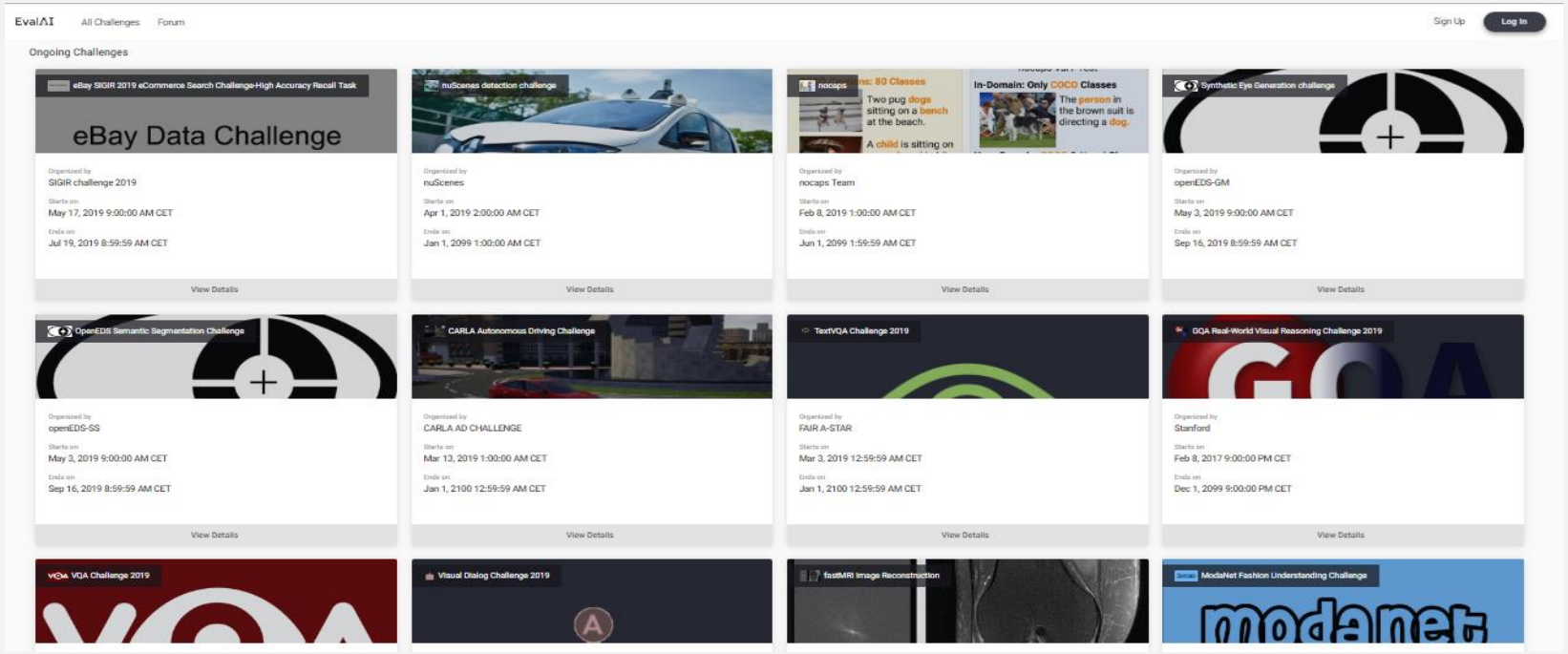
https://arxiv.org/pdf/1505.00468.pdf

III. Conclusion

III. Conclusion
1. EvalAI challenges

EvalAI : an open source platform for evaluating and comparing machine learning (ML) and artificial intelligence algorithms (AI) at scale

+ VQA challenges host



https://evalai.cloudcv.org/

III. Conclusion
2. EvalAI vs Kaggle …

Features	OpenML	TopCoder	Kaggle	CrowdAI	ParlAI	Codalab	EvalAI
AI challenge hosting	✗	✓	✓	✓	✗	✓	✓
Custom metrics	✗	✗	✗	✓	✓	✓	✓
Multiple phases/splits	✗	✗	✗	✓	✗	✓	✓
Open source	✓	✗	✗	✓	✓	✓	✓
Remote evaluation	✗	✗	✗	✗	✓	✓	✓
Human evaluation	✗	✗	✗	✗	✓	✗	✓
Evaluation in Environments	✗	✗	✗	✓	✗	✗	✓

https://github.com/Cloud-CV/EvalAI

Thanks for your attention

But before , check this