Paris, FRANCE
+33682742729
victor.busa@gmail.com

Victor BUSA

twice22.github.io
github.com/Twice22
linkedin.com/in/victorbusa

A French Machine Learning Enthusiast experienced in utilizing data to build systems that help people in their everyday lives. Passionate about research and seeking to deploy my skills in the field of Machine Learning.

TECHNICAL SKILLS

Languages: Python, Go, C++, Scala, JavaScript, HTML5, CSS3

Frameworks/Libraries: Scikit-learn, Pandas, Numpy, Numba, OpenCV, Keras, TensorFlow, jQuery

Other: Math, Statistics, Machine Learning, Jira, Git/GitHub, LaTeX, Agile Software development, Consulting, Finance

PROJECT EXPERIENCE

Reinforcement Learning Projects - *github.com/Twice22/HandsOnRL* *github.com/Twice22/RL_project* *September – 2018*

- Implemented several Reinforcement learning algorithms: Monte-Carlo, REINFORCE, Value Iteration, Policy Iteration, Multi-Arms Bandit, Q-Learning, Deep Q-learning, … (Ongoing projects)
- Implemented the AlphaGo Zero paper from scratch in TensorFlow (Ongoing project – Almost finished)

Kernel Projects - *github.com/Twice22/KernelCombinations* *March 2018*

- Implemented the SimpleMKL paper in Python
- Implemented nonlinear combinations of kernels following this paper
- Improved the result by 2% on our training set

Visual Question Answering - *https://github.com/Twice22/VQA* *December 2017 - January 2018*

- Replicated the results from this paper: *https://arxiv.org/pdf/1505.00468.pdf* An image and a question about the image is presented to the neural network, the neural network is trained to correctly answer the question about the image.
- Achieved the same performances as described in the paper: 52% accuracy on the test set (accuracy of a random method is 0.15%)

Dog Breeds Recognizer - *github.com/Twice22/Dog-Breed* *April 2017*

- Used transfer learning and fine tuned a model to recognize dog breeds
- Improved the accuracy of the model by augmenting the data (both positive and background images)
- Created an application to tell you to which dog breed you look like the most
- Achieved 82% accuracy over 130 dog breeds on the test set

American Sign Language Recognizer - *github.com/Twice22/ASL-Recognizer* *March 2017*

- Developed a HMM-based American Sign Language Recognizer
- Achieved 36% WER using a dataset of only 140 samples

Stanford Projects - *github.com/Twice22/CS231n-solutions* *github.com/Twice22/CS224n-solutions* *February - May 2017*

- Studied Deep Learning using materials freely available from Stanford University
- Implemented Skip-Gram, BacthNormalization, DropOut, Convolutional Layer in pure Python
- Implemented a style transfer neural network
- Fooled a neural network for image recognition by changing only few pixels in an image
- Finished all the assignments and provided detailed descriptions on my *blog*

WORK EXPERIENCE

Meero *Machine Learning Engineer* [Computer Vision] Paris, France | *December 2018 -*

- Implemented Unsupervised and Supervised algorithms for Alpha Matting/Semantic Segmentation/Image Inpainting
- Implemented A Pixelwise Adaptative Convolutional Layer in TensorFlow
- Helped my coworkers to speed-up their algorithms (x20-x100 speed-up) and to debug their codes
- Demonstrated promising results to automatically replace any grey skies into blue skies on HR images (42 Mpixels)

Sinequa *Machine Learning Engineer* [NLP] Paris, France | *April 2018 - September 2018*

- Implemented a neural network to detect topical trends [1] over time in TensorFlow
- Implemented the ExpandRank algorithm in a distributed fashion using Scala/Spark
- Improved the model from the paper: LSTM, BatchNormalization, Distributed computation, Custom gradients
- Improved the training phase velocity and report an issue in TensorFlow

Capgemini [Client: PSA] **-** *FullStack Developer* Paris, France | *February 2016 - April 2017*

- Designed new functionalities and enhanced UX/UI of the PSA B2B websites
- Improved the response time by 100% and ROI by 7%

Capgemini [Client: Société Générale] **-** *JavaScript Developer* Paris, France | *February 2015 - February 2016*

- Created a JavaScript content management framework as well as the documentation
- Ensured the deployment of the framework on all the projects
- Improved the productivity on all the projects using the framework by 80%

EDUCATION

ENS Paris-Saclay – Master MVA (Highest honors) *September 2017 – September 2018*
Courses taken: Convex Optimization, Probabilistic Graphical Models, Reinforcement Learning, Object Recognition, Statistical Learning, Unsupervised Learning, Deep Learning, Natural Language Processing, Kernel Methods, Curse of dimensionality, Prediction for sequential learning

Udacity – *Artificial Intelligence Nanodegree* *February 2017 – August 2017*

Stanford – *Convolutional Neural Network* & *Natural Language Processing* *February 2017 – May 2017*

Coursera – *Machine Learning*, *Probabilistic Graphical Model 1 & 2* *2016 & 2017*

Télécom SudParis – *Engineer's Degree* **(top 3% of the class)** *2015*

Classe préparatoire aux grandes écoles MPSI/MP* *2012*

LANGUAGES

French: Native **English**: Professional level **Chinese**: HSK5