

Youcef Kacer

Curriculum Vitae

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Machine Learning & Computer Vision Engineer

Experience

- Aug 2012 **Machine Learning & Computer Vision Engineer**, *Smiths Detection, Vitry-sur-Seine, France.*
- to current Development of machine learning prototypes to classify, detect and localize threats in X-ray images.
- Feature extraction using high-level descriptors like HoGs and Wavelets.
 - Develop feature engineering (PCA)
 - Feature classification using non linear classifiers (SVM, KNN) and ensemble methods (Gradient Boosting, Random Forest).
 - Implementation of deep learning methods to classify images (CNN) and localize threats or objects for recognition purpose (RCNN).
 - High experience tuning classifiers hyperparameters.
 - Mixing visual and semantic (Wordnet) information into Content-Based Image Retrieval system for cargo inspection purpose.
 - Assisting software team for release implementations.
 - Python (Scikit-Learn), Matlab (MatConvNet), C++ (STL, OpenCV, LibSVM), NVIDIA Gpu.
- Aug 2011 **Machine Learning & Computer Vision Engineer**, *Thales C&S, Velizy, France.*
- to Jul 2012 Development of machine learning functions on color images to analyse (colour, shape, license plate) and control vehicles at frontiers.
- Localize vehicle using high level image processing (Hough transform).
 - Develop SIFT feature extractor for shape recognition.
 - Colour vehicle classification using a derivation of PLSA datamining algorithm (Probabilistic Latent Semantic Analysis) and color hierarchical clustering (Mean-Shift algorithm).
 - C++ (STL, Boost, OpenCV), Matlab
- Jun 2009 **Signal Processing Engineer**, *Thales Air Systems, Limours, France.*

- to Nov 2010 Development of a Matlab prototype function on ground pulse radar, to detect exact positions and speeds targets (solving well-known distance and speed ambiguities)
- Clustering elementary detections using Hierarchical Ascendant Clustering with Ward distance.
 - Prune false alarm by statistics test (goodness-of-fit) on cluster compactness.
 - Using synthesized data for developement and fine-tuning parameters on ground-truth recordings to meet performance requirements (distance and angular target discrimination)
 - Assisting software team for release implementation and validation team for real time analysis.
- Mar 2008 **Engineer Intern**, *Dassault-Aviation, Saint-Cloud, France*.
- to Oct 2008 Prototype a Matlab antenna mesh and simulate it to meet performance requirements (central frequency and bandwidth, spatial directivity).
- July 2007 **Waiter**, *Le Pain Quotidien, London, UK*.
- to Sept 2007 Work as a waiter during job summer.

Education

- 2016–2017 **Data Scientist & Big Data Certificate**, *Telecom ParisTech*, France.
- 25-days professional courses to challenge extraction information from large scalable data. Follow [link](#) for more details.
- Vapnik-Chervonenkis theory for statistic learning
 - Supervised/Unsupervised Learning
 - Markov Chains and Bayesian Networks
 - NoSQL database
 - Storage and Computation (Map/Reduce, PageRank) of distributed data
 - Data vizualisation
 - 4-months project to predict human density using high-resolution satellite images. Follow [link](#) for more details.
- 2016 **MySQL Online Certificate**, *openclassrooms.com*, France.
- Online professional certification to create, store, manage and query relational database with MySQL
- Indexation, Keys, Jointures, Aggregation and grouping, Transactions, Procedures, Error handling, Triggers. Follow [link](#) for more details
- 2005–2008 **Msc in Mathematics & Computer Science**, *Telecom Bretagne*, France.
- One of the leading Engineering School in France.
- Deterministics signals and frequency analysis.
 - Random signals and statistics.
 - Image processing for computer vision.
- 2002–2005 **Scientific Preparatory Classes PCSI/PC***, *Lycée Fénelon*, France.

Scientific preparation to the french Grandes Ecoles with competitive entrance examinations

1999–2002 **Scientific Baccalauréat with honors (French high-school degree)**, *Lycée Hélène Boucher*, France.

Technical skills

Scientific Programming

Python	★ ★ ★
Matlab	★ ★ ★
Lua	★
Java	★
C/C++	★ ★ ★

Machine Learning Frameworks

Open Computer Vision	★ ★ ★
LibSVM	★★
Scikit-Learn	★ ★ ★
XgBoost	★
MatConvnet	★ ★ ★
Keras	★★
Torch	★

Distributed Data Frameworks

Hadoop (HDFS, MapReduce)	★
Apache Spark	★

Database Management

MySQL	★
MongoDB	★★
HBase	★★

Scripting & Tools

bash (awk, sed, ...)	★ ★ ★
Git	★★
Jekyll	★
Markdown	★★
L ^A T _E X	★ ★ ★

Interests

Traveling, daily fitness, cooking, French literature