

Louis DOUGE

ENSTA PARISTECH · NATIONAL UNIVERSITY OF SINGAPORE · AXA

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Experience

AXA Research, Engineering & Vision (REV)

Singapore

DATA SCIENTIST

Mar. 2019 - Present

- Developed propensity models on large customer datasets (>100GB) using various architectures of Neural Networks (Python Dask+tensorflow.keras)
- Built an interactive dashboard to help business interpret propensity models outputs (Flask+DC.js, see Github Repo)
- Team presentations:
 - Hedging of Variable Annuities,
 - Implementing Neural Networks: tricks of the trade,
 - Deploying an interactive web app, an end-to-end example
- Representative of AXA to the Singapore Veritas project: Monetary Authority of Singapore's framework for financial institutions to promote the responsible adoption of AI -*ongoing*.
- Semantic Segmentation to identify Car Parts using Deep Learning (Mask R-CNN) -*ongoing*.

Architas Solutions - Member of AXA Group

Singapore

HEDGING ANALYST - APAC TEAM

Mar. 2018 - Mar. 2019

- Performed dynamic hedging activities for Variable Annuities (VA) products
- Demonstrated operational excellence in Asset and Liability Management (ALM), derivatives valuation and VA pricing
- Daily collaboration with Australian (AMP) and Hong Kongese clients (AXA Life Europe)
- Developed and enhanced technical tools in C++ (Asset pricer), C# and VBA (Trading Tool generation) as well as SQL (Inforce Analysis Tool) with both Europe and Asia teams.

Covalent Capital - Fintech Startup

Singapore

PART-TIME INTERN - WWW.COVACAP.COM

Jul. 2017 - Dec. 2017

- Created an analytical dashboard using VBA
- Developed an Online Roadshow Planner for automatic meeting planning (Python: Flask+MySQL)
- Worked on optimal assignment problems, applied to bond issuance
- Developed animations for the website's welcome page (Javascript - JQuery)

New York University - Computer Science Department

New York, USA

RESEARCH SCHOLAR - SUPERVISOR: BHUBANESWAR MISHRA

May. 2016 - Jul. 2016

- Explored Stochastic Processes involved in Linguistics based on Partha Niyogi's work
- Built Language evolution model using word2vec vectorization algorithm, Kohonen Maps (Self-Organizing Maps), and the concept of Bayesian Echo Chamber

Ignity Inc. - Precision oncology company

San Diego, USA

SUMMER INTERN - WWW.IGNITY.COM

Jul. 2015 - Aug. 2015

- Coded promotional movies dedicated to investors (PyMOL Python Library for molecular visualization).
- Assisted a scientist for data collection from a synchrotron, and protein purification

Education

National University of Singapore - French Double Degree Program (FDDP)

Singapore

MASTER OF ENGINEERING (MASTER BY RESEARCH) - INDUSTRIAL & SYSTEMS ENGINEERING

Aug. 2016 - Jul. 2018

- Master thesis: Real-time Vehicle Routing Problem with Stochastic Demands inspired by real logistics companies.
- Approximate Dynamic Programming
- Online data processing (from Singapore's Land Transport Authority API)
- Neural Networks course (MLP, RBF, SOM, Markov Decision Processes)

ENSTA ParisTech (Master's degree, year 1) - "Grande École"

Paris, France

"DIPLOME D'INGÉNIEUR" CURRICULUM

Sept. 2015 - May 2016

- Stochastic Calculus (applied to Quantitative Finance)
- Statistical Modeling (using R) and Chronological Series (ARMA, ARIMA, etc.)
- Relational Databases Design course
- Projects: Option Pricing using generic Monte-Carlo methods (C++) - Chess player program (C++)

ENSTA ParisTech (Bachelor's degree) - "Grande École"

Paris, France

"DIPLOME D'INGÉNIEUR" CURRICULUM

Sept. 2014 - June 2015

- Applied Mathematics: Differentiable Optimization, Systems Control
- PDE Analysis and Discretization
- Projects: Digits recognition using Kohonen Maps (Python)
- Minor in Economics (Macro & Micro)
- Vice-President of Forum Trium (www.forum-trium.com) - Budget: €200k - 150 companies - Managing 8 people

Lycée Sainte-Geneviève (Bachelor's degree)

Versailles, France

"CLASSES PRÉPARATOIRES" - PREPARATORY CLASSES

Sept. 2012 - Jul. 2014

- Major in Mathematics, minor in Physics
- Project: Optical Fiber Simulation using Bessel Equations (using Maple language).

Technical Skills

Languages

- French: Native
- English: Full Professional Proficiency
- Spanish: Intermediate

Programming Skills

- Advanced: Python (2.7 and 3.4+)
 - Numpy, Pandas, Matplotlib, Seaborn, etc.
 - Scikit-Learn, Dask, Tensorflow (Keras), PyTorch
 - others: boto3, tweepy, transformers (Huggingface)
- C++
- Front-End: Javascript (D3.js, Crossfilter.js, DC.js), HTML, CSS
- Others: SQL, VBA, Matlab, R

Computer Skills

- OS: Unix (Mac OSX, Linux), Windows. Shell scripting
- AWS: EC2, S3, SageMaker (including GroundTruth), AWS CLI
- Git: see my Github Repo
- Docker (doulou74 on Dockerhub)
- Latex, Microsoft Suite, Adobe Photoshop

Award

Scholarship - Fondation de Coopération Scientifique - Université Paris-Saclay

Paris, France

May 2016

Awarded after selection process, to help conduct my NYU's research project.

Personal Interests

HOBBIES INCLUDE

- Outdoor sports: Ski (Competition level), PADI Advanced Open Water (30+ logged dives in South East Asia), kitesurfing
- Technical blogging on Medium.com - 20k+ views in the past 30 days, published in TDS
- Geeky topics: investor in Crypto-currencies, HackerNews.com avid reader
- Sailing (former crew member & Sponsor manager at ENSTA's sailing association) see enstaquet.ensta-paristech.fr
- Classical Piano: recitals (with up to 30 people), Trio piano-cello-violin (Haydn) concert