Lea Gauthier
Data Scientist

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I am an experienced Data Scientist with a demonstrated history of working in high-performance computing environments. With more than 10 years of experience in the field of data science, I have a proven ability to unravel complex problems and share their solutions comprehensively to business partners.

I am using my knowledge on mining, pre-processing data and extracting knowledge using deep learning, Bayesian statistical modelling and various machine learning algorithms. I am skilled in BigData Analytics, Machine Learning, Statistical Data Analysis, etc.

Professional Experience

Now – January 2018 — **Senior Data Scientist,** Ariann Solution, Montréal

- ✓ Developped algorithms and machine learning techniques for Finance, Gaming and Advertising sectors (Neural Networks, Time-series analysis, Bayesian statistical modelling and probabilistic machine learning)
  - › Lead developer for sentiment analysis : study of tweets impact on the market using topic modeling (Latent Dirichlet Allocation model) and study of news (GlobeNewsWire) impact on the market using Embedding and LSTM model of Keras
  - › Developped a new market prediction model for price and fundamentals using fundamentals, economics, consensus and linked it with Interactive Broker for investment
  - › Analyzed Real Time Bidding data to optimize Online Advertisement Revenues with One-Hot encoder, RandomForest model and Dense Neural Network
  - › Lead developer to analyze music data to predict the next trending song using Bayesian statistical modelling. Developped an API to return these informations as a json according to user's options.
- ✓ Development of web interface for data visualization with Dash to present algorithm's result to clients

TensorFlow | Keras | Scikit-Learn | Gensim | Dash | python | MySql | Parquet | HTML | PHP | JavaScript

December 2017 – August 2016 — **AI Developer,** Guillemot R&D, Montréal

- ✓ Development of machine learning techniques (TensorFlow, Keras, Scikit-Learn for Random Forest and Deep Neural Network) in multiples sectors
  - › Developped models to predict the market's price using fundamentals and economics with Time Series analysis and Random Forest model
  - › Lead developer for sentiment analysis models with deep neural networks for tweet analysis
  - › Developped a model to predict the potential revenue of user into Real Time Bidding using Deep Neural Network and One-Hot Encoder + Random Forest
  - › Developed model to extract Beat Per Minute in songs in order to automatically mix music for DJ platforms
- ✓ Web Interface development with data visualization tools to present algorithm's result to clients

TensorFlow | Keras | Scikit-Learn | python | C++ | PHP | JS | HTML | Plotly | Bokeh | SQL | git | svn

August 2016 – August 2015 — **Researcher-Developer,** Gameloft, Montréal

- ✓ Worked on pattern recognition and machine learning techniques :
  - › Empowered the production and business by studying the sales impact from advertisements with Time Series Analysis (SARIMAX method)
  - › Developped of a Geolocalisation model (C++ programming)
  - › Developped algorithms for RTB on different platforms (Appnexus, Spotx) to increase online advertisement banners and videos
  - › Worked on topic modelling and natural language processing to define new categories of mobile's games
- ✓ Web interface development for data visualization of the sales' impact
- ✓ Utilization of database management and collaborative Tools

Scikit-Learn | python | C++ | PHP | JS | HTML | MySQL | svn | Jira | Apache Cassandra

July 2015
October 2012

Post doctoral Fellow, Université de Montréal, Montréal/Genève

- ✓ Work on the ATLAS experiement at the LHC
  - › Optimized and expanded signal extraction strategies using Boosted Decision Trees
  - › Developped a Likelihood method to analyse the reconstruction error of the electron's charge and correct it
  - › Coordinator of the analysis Chargino-Neutralino pair production in same-sign dilepton events
  - › Hardware work on the development of a new particle subdetector
- ✓ Teaching PHY1902L - Électricité et optique at Université de Montréal
- ✓ Popularizing science for Cegep sudents
- ✓ Publications of four scientific articles

C++ | python | Root | svn | Jira | LaTeX

September 2012
October 2009

Doctorant-Enseignant, CEA-Saclay, Paris/Genève

- ✓ Thesis on fundamental physics at the ATLAS experiment at the LHC (work on hardware, experimental and theoretical physics)
  - › Developped a model for data mining and pattern recognition of big data (Bayesian statistical modelling and probabilistic machine learning with Boosted Decision Tree) with the goal of affirm or refute a new theory
  - › Empowered the trigger system of the Level 1 Electromagnetic Calorimeter by improvement of the calculation of the energy reconstruction of the particules (Big Data, clustering)
  - › Development of a new particle physics model to explain the origin of the dark matter
- ✓ Teaching Activities at Université Paris-Sud (Electromagnetic and Optic)
- ✓ Publications of five scientific articles

C++ | python | Root | svn | Jira

Qualifications

2012 PhD in physics CEA-Saclay
2009 Master's degree in fundamental and applied physics Université Paris-Sud
2007 Bachelors in physics Université Paris-Sud/Nice

Skills

Programming Python, C++, Root, LaTeX, Plotly, Dash, Bokeh
Machine Learning TensorFlow, Keras, Scikit-Learn, Gensim
Web HTML, PHP, JavaScript
Database phpMyAdmin, MySQL, Parquet
Tools git,svn, Jira
Communication Strong skills for team work and communication/presentation
Language French and English

Interests

- Rowing
- Cross-country skiing
- Yoga