Antoine Tixier, PhD
Data Science
Geographic preferences: North America, Europe
Availability: start of 2017

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PROFESSIONAL EXPERIENCE

2015-current **ÉCOLE POLYTECHNIQUE, Palaiseau, France**
Postdoctoral researcher, Data Science and Mining Team (DaSciM)
Applied researcher within a group developing solutions for clients including Airbus, SNCF, FDJ, the French government…
Leader of OpenPaaS (11M€)' subproject #5 (~8 people): automated text summarization, keyword extraction & recommendation.
Gained expertise in network analytics, NLP, deep learning, information retrieval, data visualization.
Daily use of R, R Shiny, Python. Publications in top NLP conferences: ACL, EMNLP, ICASSP, EACL.
TA for *Advanced learning for text and graph data* (M2 course), Spring 2016. Supervision of various X 3rd year students.

2012-2015 **COLORADO CONSTRUCTION SAFETY LABORATORY, Boulder, USA**
Graduate Research Assistant on a $400,000 National Science Foundation (NSF) project
Project title: predictive modeling of construction injuries in complex environments. 5 journal papers.
- created an automated Natural Language Processing system to detect the presence of attributes in unstructured text,
- analyzed large multivariate data sets: cleaning, diagnostics, and visualization,
- used machine learning techniques to develop predictive models aiming at guiding decision-making under uncertainty,
- modeled extreme risk, conducted simulation studies

Developed solutions for major US construction companies: Kiewit, Jacobs, Bentley Systems… Bi-monthly reporting to clients (conference calls, presentations), vulgarization, interpretation of the results. Collaboration with clients' IT teams for system integration.

Spring 2014 (5 months) **UNIVERSITY OF COLORADO AT BOULDER, USA**
Graduate Teaching Assistant, Probability and Statistics
Topics covered: probability theory, random variables and probability distributions, covariance, Poisson and Markov stochastic processes, parameter estimation (moments, MLE), probability density estimation, confidence intervals, statistical inference and hypothesis testing, regression and correlation analyses.
Mission: held bi-weekly office hours to help students with homework assignments and the topics covered in class (~ 15 students), replaced instructor when away, 6 times throughout the semester (~ 85 students). Designed and graded midterms and finals.

2011 (4 months) **ARTIS CONSTRUCTION, Paris area, France**
Junior Site Manager, construction of two office buildings for 12M€
- daily management and coordination of the 9 subcontractors (~ 30 people) onsite,
- quantity and cost estimations from blueprints and project site, selection of subcontractors,
- weekly meetings and reporting to owner and clients,
- daily construction progress inspection and monitoring, schedule and quality checking, rework management,
- worked with a lot of autonomy and responsibilities under high pressure, within tight budget and deadlines.

2010 (2 months) **CITY OF MONTREAL, Quebec, Canada**
Junior City Engineer, "Le Sud-Ouest" district
Involved in 8 projects, including:
- exhaustive inventory and documentation of existing street lighting systems in the district and incorporation in the city drawing database using Bentley MicroStation,
- field surveys of streets under construction (progress, quantity and cost checking, surveying),
- energy bill investigation, green spaces maintenance cost estimation for inclusion in yearly municipal budget.

LANGUAGES
English: fluent
French: native

COMPUTER SKILLS
R, Python, R Shiny, Spark, cluster computing, parallel processing, LaTeX, HTML Win/Unix

OTHER INTERESTS
Tennis: 2011 regional vice-champion (Paris) with ESTP team, 1st division.
IT: Colorado Construction Safety Laboratory website maintainer (2012-2015)

EDUCATION

2013-2015 **UNIVERSITY OF COLORADO AT BOULDER, USA**
PhD, Civil Engineering. Statistical data analysis and risk modeling. GPA: 3.95/4.00
Program ranked 9th out of 145 in the US. Natural Language Processing, Data Mining and Machine Learning.
Supervised learning: CART, Bagging, Random Forest, Boosting, SVM…
Unsupervised learning: PCA, K-means, K-nn, hierarchical clustering…
Risk (extreme value theory, dynamic mixtures, Copula), simulation (Monte Carlo, bootstrap, rejection sampling, conditional), GLM, nonparametric regression (local polynomials - Kernel), time series analysis (SARIMAX, Knn & Markov chain resampling).
Dissertation: *Leveraging Unstructured Construction Injury Reports to Predict Safety Outcomes and Model Safety Risk Using Natural Language Processing, Machine Learning, and Probability Theory.*

2011-2013 **UNIVERSITY OF COLORADO AT BOULDER, USA**
MS, Civil Engineering, Construction Engineering & Management. GPA: 3.88/4.00
Master's thesis: statistical modeling of the impact of emotions on risk perception and risk-taking in construction environments.

2009-2011 **ÉCOLE SPÉCIALE DES TRAVAUX PUBLICS (ESTP), Paris, France**
Master's degree, Mechanical & Electrical Engineering
Merit-based selection for the double-degree program with the University of Colorado at Boulder

2007-2009 **LYCÉE SAINTE-MARIE, Antony, France**
Classes préparatoires MPSI-MP : intense training in Math and Physics

MERIT-BASED HONORS AND AWARDS

Spring 2014 Best Teaching Assistant Award, Civil Engineering Department, CU Boulder
June 2013 Best Conference Paper Award, 120th American Society of Engineering Education (ASEE) Annual Conference, Atlanta, GA
April 2013 Doctoral Assistantship for Excellence Award, Civil Engineering Department, CU Boulder. Highest level of support offered by the department.