



# Athanasse Zafirov

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## 👤 Profile

- Interests: Data Science, Machine Learning, Forecasting.
- Experienced in deep learning, decision trees, ensemble methods, NLP, reinforcement learning.
- Years of research, coding (Python, R) and investment industry experience.

## 🎓 Education

**PhD, Anderson School of Management,**  
*University of California, Los Angeles (UCLA)*  
2018 – 2022  
(expected)

**Master's of Science, Applied Economics,**  
*HEC Montréal*  
2012 – 2015

**Bachelor's of Commerce, Finance,**  
*Concordia University*  
2008 – 2011

**Diploma of College Studies, Computer Science,**  
*Dawson College*  
2005 – 2008

## 🔗 Machine Learning Projects

**Earnings Sentiment Analysis: A Comparison of Transfer Learning Methods (BERT, ALBERT, XLNet), Natural Language Processing** 📄

**PropCast— Deep Inception-Convolutional LSTM Networks for Forecasting Spatio-Temporal Transitions in Property Index Heatmaps, Deep Learning** 📄

**FREEtree: Tree Method for High Dimensional Longitudinal Data, CRAN R package creator** 📄

## 🧠 Skills

Python • R • SQL • Web Scraping • NLP  
PyTorch • TensorFlow • Scikit • Keras

## 📁 Professional Experience

**Analyst, Letko Brosseau (private fund, AUM: \$27B)**  
2014 – 2016 | Montreal, Canada

- Forecasting and modeling: emerging market economics, energy markets, corporate profits.
- Data organization, presentation and visualization.

**Intern — Quantitative Analysis,**  
*CDPQ - Québec Public Pension Plans (AUM: \$286B)*  
2013 | Montreal, Canada

- Developed a PCA Autoregression tool with GUI for forecasting and monitoring inflationary pressures.

**Intern — Macroeconomic Analysis,**  
*CDPQ - Québec Public Pension Plans (AUM: \$286B)*  
2013 | Montreal, Canada

- Forecasting and modeling: unemployment, gross domestic product, demographics, productivity.

**Intern — Capital Markets, Portfolio Strategy,**  
*Scotiabank*  
2010 – 2011 | Montreal, Canada

- Financial market data organization, interpretation, presentation and visualization.

**Intern — Trading Floor,**  
*Healthcare of Ontario Pension Plan (AUM: \$114B)*  
2009 | Toronto, Canada

- Software tool development for trading floor operators.

**Intern — Software Development, Centre d'Etude et de Développement de l'Informatique**  
2008 | Lyon, France

## Publications — Authorships

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**A Comprehensive Look at the Empirical Performance of Equity Premium Prediction II,**  
*R&R at The Review of Financial Studies* [↗](#)

**FREEtree: A Tree-based Approach for High Dimensional Longitudinal Data With Correlated Features,** *arXiv — Statistics: Machine Learning* [↗](#)

**Improving Inference with Machine Learning: Application to CEO Turnover,**  
*Forthcoming dissertation*

## Publications — Research Assistance

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**Minimum Wage and Individual Worker Productivity: Evidence from a Large US Retailer,**  
*Forthcoming, Journal of Political Economy* [↗](#)

- Analysis of minimum wage changes on store and employee outcomes of large US retailer (~5,000 stores). Linking together HR data, performance, turnover, scheduling, payments, geography, revenues and web scraping instrumental variables.

**Government Debt Management The Long and the Short of It,**  
*Published, The Review of Economic Studies* [↗](#)

- Analysis and empirical work on US debt.

**Unemployment insurance with limited commitment wage contracts and savings,**  
*Published, BE Journal of Macroeconomics* [↗](#)

- Researched conditions of unemployment benefits in the US.

**Household Search and the Aggregate Labor Market,**  
*Published, The Review of Economic Studies* [↗](#)

- Research and statistical analysis using US CPS household data.

## Languages

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**English**

**French**

**Bulgarian**

**Spanish**  
(B1)

## Machine Learning PhD Classes

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**ENGR C247: Neural Networks & Deep Learning,**  
*UCLA Engineering Department*  
• Grade: A

**BIOSTAT 273: Classification and Regression Trees (CART) and Other Algorithms,**  
*UCLA Biostatistics Department*  
• Grade: A+

**COM SCI 263: Natural Language Processing,**  
*UCLA Computer Science Department*  
• Grade: A

**STATS 232C: Cognitive Artificial Intelligence (Reinforcement Learning),**  
*UCLA Statistics Department*  
• Grade: A+

## Teaching Assistance

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**MGMT 439: Tools and Analysis for Business Strategy (introduction to data science),**  
*Graduate level (UCLA)*  
• Created class assignments and solutions.

**MGMT 264A: Market Research (regression, dimensionality reduction and clustering techniques),** *Graduate level (UCLA)*  
• Created class assignments and solutions.

**MGMT 403: Financial Accounting,**  
*Undergraduate level (UCLA)*

**ECO 680109: Applied Econometrics,**  
*Graduate level (HEC Montréal)*

**ECO 600112A: Economic & Corporate Organization,** *Graduate level (HEC Montréal)*

**ECO 380607: Introduction to Econometrics,**  
*Undergraduate level (HEC Montréal)*

## Awards

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**Nominated - Best Master's Thesis (2015)** [↗](#)

**Academic Excellence Award (2012 & 2013)**  
Highest average of the Master's program

**Academic Excellence Award (2007)**  
Highest average of the Computer Science program