

ALEXANDER EL-HAJJ

📞 mobile: (613)-983-8656
✉ direct: alex.elhajj88@gmail.com
🐙 github: a-elhajj
🌐 website: a-elhajj.github.io

Experience

- Jan 2021–Present **Statistics Canada, Analyst, Ottawa, ON**
Devised strategies to improve the production time of the Longitudinal and International Study of Adults survey
Lead dialogs with stakeholders and assume a supervisory role when management is away
Composed a blog for the Data Science Network for the Federal Public Service on Elastic Stack and its applications within the Data Science Division. Currently in peer review
- Jan 2020–Jan 2021 **Statistics Canada, Data Scientist, Ottawa, ON**
Supported multiple intergovernmental agencies, including Health Canada and Public Health Agency of Canada by assisting in developing predictive and learning models as well as building actionable real-time dashboards and visualizations to inform all stakeholders
Designated Elastic Stack specialist within the Data Science Division at Statistics Canada
- Jan 2019–Jan 2020 **Statistics Canada, Recruit Analyst, Ottawa, ON**
Lead research analyst for two publications on food insecurity: 1) a validation report; and 2) a research paper exploring the association between food insecurity and stressful life events
Developed a text classification model that classifies interviewer responses to North American Industry Classification System codes
Translated 3000+ lines of STATA code to SAS to provide language options for researchers
- Sept 2018–Jan 2019 **Statistics Canada, Analyst, Ottawa, ON**
Created automated programs (e.g., anomaly detector) to increase survey process efficiency
Used text mining to collect vital information from interviewer notes and remarks
- Jun 2018–Aug 2018 **Statistics Canada, Survey Development and Dissemination Analyst, Ottawa, ON**
Conducted custom data tabulations and analysis for clients requesting cost recovery
- Jul 2016–Aug 2017 **Department of National Defence, Records Management Clerk, Ottawa, ON**
Created, updated and modified Excel spreadsheets while analyzing for errors
Maintained files precisely and professionally

Academic Credentials

- 2013–2018 **Bachelor of Economics Hons, Carleton University, Ottawa**
Minor: Statistics
Dean's Honour List 2017-2018
Graduation Date: August 2018
Honours Paper: "The Impact of Substance Abuse in Tennessee: The Relationship between Low Birth Weight and Substance Use During Pregnancy"
Excelled in statistics and data science coursework
Completed a senior project to predict heart disease. Used Random Forest with Stochastic Gradient Boost, Support Vector Machine Radial, and Fast and Frugal Trees

Papers in Statistics Canada Journals

- March 10, 2021 El-Hajj, A., Benhin, E. (2021). The association between stressful life events and food insecurity. *Longitudinal and International Study of Adults Research Paper Series*.
<https://www150.statcan.gc.ca/n1/en/catalogue/89-648-X2021001>

November 2, 2020	El-Hajj, A., Benhin, E. (2020). Validation of the Food Security Module in the 2018 Longitudinal and International Study of Adults. <i>Longitudinal and International Study of Adults Research Paper Series</i> . https://www150.statcan.gc.ca/n1/pub/89-648-x/89-648-x2020004-eng.htm
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Published News Bulletins

March 10, 2020	Statistics Canada. 2021. Study: Association between food insecurity and stressful life events among Canadian adults. The Daily. March 10. Statistics Canada catalogue no. 11-001-X. https://www150.statcan.gc.ca/n1/daily-quotidien/210310/dq210310d-eng.htm
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Book Chapters (Prerelease)

Release Date: December 2021	Denis, N., El-Hajj, A., Drummond, B., Abiza, Y., & Gopaluni, K. (2021). Learning COVID-19 Mitigation Strategies using Reinforcement Learning. In <i>Mathematics of Public Health: Proceedings of the Seminar on the Mathematical Modelling of COVID-19</i> (Volume 85 of Fields Institute Communications). Cham: Springer International Publishing.
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Research Interests

Deep learning, reinforcement learning, natural language processing, cryptography, food insecurity, and education and quality of life

Technical Skill

Academic coursework	Statistics, operations research, experimental design, data mining and machine learning, econometrics, measurement economics, and sampling methodology
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Personal coursework	Probabilistic Graphical Models 1 (Coursera, 2021* in progress), Sequence Models (Coursera, 2020), Machine Learning A-Z (Udemy, 2019), Deep Learning A-Z (Udemy, 2018), and Neural Networks for Machine Learning From Scratch (Udemy, 2018)
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Computing

Proficient	Python, R, Julia, Elastic Stack (Elasticsearch, Logstash, Kibana), SAS, STATA, SQL, bash, painless, Vega, Vega-Lite, Git, Docker, Amazon Web Services, Microsoft Azure
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Python packages: pandas, numpy, matplotlib, sqlite3, seaborn, plotly, scikit-learn, beautifulsoup, xgboost, nltk, gensim

Basic	Power BI, SPSS, Matlab, Octave, jq, GGobi, Kubernetes, HTML Python packages: pytorch, tensorflow, keras, scrapy, scipy, lightgbm
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Leadership Positions

May 2021–Present	Organizer, Internal Reading Group, Statistics Canada, Ottawa Assist with deciding on a research paper to deliberate while also leading discussions on the corresponding research paper
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Jan 2020–Present	Steering Committee Member, Machine Learning Community of Practice, Statistics Canada, Ottawa Organize and facilitate events such as presentations or video tutorials on a wide-range of machine learning topics
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Sept 2018–April 2020	Founder and Organizer, Kaggle Competitive Group, Statistics Canada, Ottawa Lead a team of colleagues to compete in upcoming Kaggle.com data science competitions
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July 2018	Captain, Imputation Hackathon, <i>Statistics Canada, Ottawa</i> Tasked to design and create a more precise and efficient method for imputing T2 tax data Facilitated and organized a team of 8 colleagues to complete a final product in three days
2015–2017	Vice President, Help Everyone Live Prosperously, <i>Carleton University, Ottawa</i> Coordinated philanthropic fundraising events and managed an organization of 10 members

Volunteer Experience

2015–2018	Statistics Tutor, Salvation Army, Carleton Foot Patrol, and Relay for Life
2012–2015	Wax Off for Cancer, Ottawa Food Bank, Canadian Foundation for AIDS Research, Scotiabank AIDS Walk, Bi-annual Mooney's Bay Cleanup, and Carleton Disability Awareness Center

Other

Sept 2018–Present	Member, R/Python Users & Machine Learning Community of Practice, <i>Statistics Canada</i>
April 2020-January 2021	Member, Public Health Agency of Canada External Modelling Experts Group (COVID)
2016–Present	Security Clearance: Government of Canada Reliability Status

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