

ALEXANDER EL-HAJJ

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Experience

- Jan 2021–Present **Statistics Canada, Analyst, Ottawa, ON**
Leading efforts to publish a four-part blog series on the Elastic Stack and its applications within the Data Science Division. Will be published on the Data Science Network for the Federal Public Service (DSNFPS)
Lead author of a Daily article to be published with a research paper on food insecurity written in 2020
- Jan 2020–Jan 2021 **Statistics Canada, Data Scientist, Ottawa, ON**
Health Canada Collaboration: Integrated API calls from various Natural Health Product databases to a centralized pipeline and implemented the product proposal mechanism – a Quality Assurance verification task that determined whether the product claims complied with Health Canada standards
Public Health Agency of Canada Collaboration: Assisted in the designing and development of a novel Reinforcement Learning (RL)-based modelling approach for learning and analyzing pandemic mitigation strategies (COVID-19)
Co-lead writer in the publication of a book chapter in the Fields Institute Seminar on Mathematical Modelling of COVID-19
Developed a fully-integrated dashboard using the Elastic Stack and presented the dashboard to the client (Public Health Agency of Canada)
The designated Elastic Stack expert within the Data Science Division at Statistics Canada
- Jan 2019–Jan 2020 **Statistics Canada, Recruit Analyst, Ottawa, ON**
Contributed to reviewing the documentation for the Intergenerational Family Files and led the integration of the new LISA Wave (Wave 4) into the family files
Learned complex STATA code and was able to conduct a code translation of the full family file scripts from STATA to SAS (over 2000 lines of STATA code)
Lead research analyst for two publications on food insecurity: the first was a validation report on the food security module and the second was a research paper exploring the association between food insecurity and stressful life events
Developed a machine learning (ML) text classification model that classified NAICS codes using the Support Vector Machines (SVM) algorithm
- Sept 2018–Jan 2019 **Statistics Canada, Analyst, Ottawa, ON**
Investigated the implementation of automated programs to increase the efficiency of the survey process, including anomaly (outlier) detection
Examined the use of text mining to collect vital information from interviewer notes and remarks left during the interview process
Implement programs to solve daily problems and verify survey data accuracy
- Jun 2018–Aug 2018 **Statistics Canada, Survey Development and Dissemination Analyst, Ottawa, ON**
Implemented an interactive dashboard to assist in the visualization of the over 900 variables
Conducted custom data tabulations and analysis for clients requesting cost recovery and ensured that the Statistics Canada disclosure control guidelines were met
- 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"
2012–2013	Bachelor of Computer Science, Carleton University, Ottawa

Selected publications ACCEPTED

March 10, 2021	El-Hajj, A., Benhin, E. (2021). The association between stressful life events and food insecurity. <i>Longitudinal and International Study of Adults Research Paper Series</i> . 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

Book Chapters PRE-RELEASE

Release Date: June 2021	Denis, N., El-Hajj, A., Drummond, B., Abiza, Y., & Gopaluni, K. (2021). Learning COVID-19 Mitigation Strategies using Reinforcement Learning. In <i>Fields Institute Seminar on Mathematical Modelling of COVID-19</i> (Fields Institute Communications). Cham: Springer Nature Switzerland AG. (preliminary citation)
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Research Interests

Food insecurity, education and quality of life, reinforcement learning, deep learning, artificial intelligence, music generation using deep neural networks

Technical Skill

Coursework	Statistics, operations research, experimental design, data mining and machine learning, research methods in economics, econometrics, measurement economics, and sampling methodology
	Computing
Proficient	Python, R, Julia, Elastic Stack (Elasticsearch, Logstash, Kibana), SAS, STATA, SQL, GGobi, bash, painless, Vega, Vega-Lite, Git, Docker
Basic	Power BI, SPSS, VBA, Matlab, Octave, Java, jq, C++

Certificates/Courses

Probabilistic Graphical Models 1 (Coursera, 2021), Sequence Models (Coursera, 2020)
Machine Learning A-Z (Udemy, 2019), Deep Learning A-Z (Udemy, 2018), Introduction to Data Mining 1 (Carleton University, 2018), and Neural Networks for Machine Learning From Scratch (Udemy, 2018)

Leadership Positions

May 2021–Present	Organizer, Internal Reading Group, <i>Statistics Canada, Ottawa</i> Assist with deciding on a research paper to deliberate while also leading discussions on the corresponding research paper
Jan 2020–Present	Steering Committee Member, Machine Learning Community of Practice, <i>Statistics Canada, Ottawa</i> Organize and facilitate events such as presentations or video tutorials on a wide-range of machine learning topics
Sept 2018–April 2020	Founder and Lead Organizer, Kaggle Competitive Group, <i>Statistics Canada, Ottawa</i> Lead a team of colleagues to compete in upcoming Kaggle.com data science competitions
July 2018	Co-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> Organized philanthropy and fundraising events while coordinating 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

April 2020–Present	Member, Public Health Agency of Canada (PHAC) External Modelling Experts Group (COVID-19)
Sept 2018–Present	Member, R/Python Users & Machine Learning Community of Practice, <i>Statistics Canada, Ottawa</i>
2016–Present	Security Clearance: Government of Canada Reliability Status