BENJAMIN LABRECQUE

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EDUCATION

McGill University, Montreal September 2014 - April 2020
B.Sc. Computer Science, Minor in Mathematics GPA: 3.67
• Coursework toward B.Eng. in Mechanical Engineering (2014 - 2016)
• Relevant Coursework: Algorithms & Data Structures, Applied Machine Learning, Artificial Intelligence, Probability Statistics, Database Systems, Stochastic Processes, Discrete Math, Lin. Algebra, Differential Equations, Advanced Calculus
• Principal's Student-Athlete Honour Roll (Soccer)

Kantonsschule Sursee, Switzerland Graduated June 2014
Swiss Matura, concentration in Physics and applications of Mathematics

WORK EXPERIENCE

Royal Bank of Canada - Amplify Program - *Data Science Intern* May 2019 - August 2019
• Developed a feature providing users of GetDigs by RBC Ventures with a competitive advantage in the rental market.
• Predicted rent prices in Toronto based on historical data and presenting information to users through a web application.
• Formatted geospatial data for optimal performance in web application and matching users to listings based on location.

SELECTED PROJECTS

Competitive Programming - *C++*
• Implementing and using common algorithms and data structures in C++ to solve computational problems.
• Enrolled in a programming challenges course and part of a competitive programming club at McGill University.
• *https://github.com/Benji19967*

Kaggle Competition - *Python, Keras, Sklearn*
• Finished 5th out of 56 teams in Applied Machine Learning class at McGill.
• Trained a CNN using Keras to classify 10'000 images from the Google "Quick Draw!" dataset with 85% accuracy.
• Implemented a fully connected neural network trained by backpropagation from scratch in Python.

ICLR 2019 Reproducibility Challenge - *Python, PyTorch*
• Analyzed a paper on lossless data compression submitted at the conference and reproduced the presented results.
• Optimized the hyperparamters of the Variational Autoencoder used to achieve better compression rates.

Sentiment classification of Yelp restaurant and IMDB movie reviews - *Python, Sklearn*
• Classified 25000 IMDB reviews into positive or negative sentiment and 2000 Yelp reviews into ratings from 1 to 5.
• Compared several classifiers based on F1-measure using both BBoW and FBoW: GNB, Linear SVM and Decision Trees.
• Performed hyperparameter tuning on all classifiers using GridSearchCV and compared performance to baseline classifier.

Simulation of Radioactive Decay and Data Analysis - *GeoGebra*
• Designed an experiment using dices to investigate composite and sequential radioactive decay.
• Estimated the unobserved decay constants and half-life periods using minimum chi-squared estimation.
• Plotted correlation of decay constant and initial number of nuclei through covariance ellipse to get 2D confidence interval.

SKILLS

Languages/technologies: Proficient in: C/C++, Java, Python, Unix/Linux, NumPy; Familiar with: R, SQL, GCP, HTML, CSS; Previously used: Keras, PyTorch, JavaScript, JQuery

Other languages: Fluent in French, English and German. Currently tackling Spanish.

EXTRA-CURRICULAR

McGill Rocket Team September 2015 - December 2016
Subteam Lead - Body Tube and Nose Cone

· Designed and manufactured the body tube and nose cone to be incorporated in a rocket competing in the Space Port America Cup. Guided a dozen new students through the manufacturing process.