Ben Holmes

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Skills

Programming	Strong Python and Java developer. Experience with C/C++, JavaScript, MATLAB, and R.
Deep Learning	Experience implementing LSTMs, CNNs, GANs, and reinforcement learning models in PyTorch, TensorFlow, Keras, and MXNet. Strong understanding of the underlying math.
Data Science	Data exploration and cleaning, feature engineering, large datasets, written and verbal communication. Skilled in Pandas, Dask, and Sklearn.

Experience

Quantitative Analyst Co-op
Castleton Commodities

May - Aug 2019
Calgary, AB

- Used Python and Dask to perform data exploration on a large (over 100GB) dataset to verify industry priors about freeze-offs — a poorly understood but crucial factor in the price of natural gas markets.
- Developed, trained, and validated machine learning models using Python and Scikit Learn to predict natural gas production as a function of multiple variables.
- Documented research process and results, and presented my findings to the data science and trading teams.
- Wrote Python script to process trade tick data into daily indexes that were more accurate than the ones given by the exchanges.

Software Developer Co-op
Blue Willow Systems

Jan - May 2018
Vancouver, BC

- Researched emerging localization technologies and wrote Python algorithms for a proof of concept that integrated the new technology with our existing system.
- Tested and iterated on filtering algorithms to reduce location error from 4 meters to less than 1 meter.
- Implemented front-end, back-end, and SQL database changes to production web and mobile applications which added new features including an incident report system and a company-wide announcements board for customers.
- Wrote a custom Android application that used bluetooth to showcase company technology during sales meetings when the full, cloud-based system could not be installed.

Projects

NN from Scratch	Implementing a fully connected neural network from scratch in Python using Numpy.
Autonomous Robot	Built an autonomous robot capable of navigating a complex course and retrieving stuffed animals along the way. Deployed an object localization algorithm on a Raspberry Pi to detect the stuffed animals and navigate the robot towards them.
Kaggle Projects	Competed in several Kaggle competitions including house pricing and leaf classification.

*More info on the projects above, as well as all my other projects and experiences, can be found at my website: **bholmes.ca***

Education

B.ASc Engineering Physics
University of British Columbia

Sep 2016 - Apr 2021 (Expected)
Vancouver, BC

Course work includes: Mechanical design and analysis; analog circuits; signals and systems; object-oriented programming; linear algebra; complex analysis; electricity and magnetism; technical communication; sustainable design.
Cumulative average: 80.2%

Exchange Semester
Technical University of Denmark

Sep 2019 - Dec 2019
Copenhagen, DK

Courses taken: Deep Learning; Computationally Hard Problems; Robotics; Computational Multibody Dynamics.