Liam Wood Roberts

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Skills

- **Advanced:** Python (pandas, numpy, sk-learn, TF, SpaCy, NLTK, seaborn, matplotlib), Model Deployment (flask,nginx,uwsgi), NLP, Computer Vision, Sequence Data, Deep Learning, Git, Data Visualization, Unix.
- **Experience With:** SQL,Tableau, Spark, Hadoop, Cloud Services (AWS,GCP), Text Summarization, NER.

Experience

Data Science Fellow at SharpestMinds   06/2019 - Present

- Developing an application to improve the quality of medical discharge summaries using the MIMIC III dataset.
- Services include: **1.** Specialized NER for medical entities such as drugs, symptoms, and procedures using LSTM sequence models. **2.** Text summarization for patient's medical history using LSTM encoder / decoders. **3.** Automated parsing for quicker information extraction through python scripting.
- Collaborating with head data scientist at HealthChain to push services into deployment.

Junior Educator (Data Science) at Brainstation   11/2018 - 04/2019

- Created over 12 hours of technical course content showing CNN implementations in Keras / Tensorflow and how to set up a GPU for cloud based training of deep learning models. Delivered this new content to 40+ students.
- Overhauled BrainStation's cloud computing, machine learning, and data visualization course materials based on student feedback and performance analysis. Created additional course material where it was lacking (such as for cloud computing and CNNs), providing students with many more worked examples for data exploration, visualization and analysis in Python.

Engineering Services Coop at Linamar Skyjack   05/2015 - 06/2015

- Designed data upload system to automate data entry task. Reduced data entry time demand from ~3 hours / week to ~30 minutes / week.
- Formulated and constructed system for tracking office supply equipment.
- Organized and led weekly meetings addressing constantly changing priorities and deadlines.

Projects

Galaxy Morphology Web Application   07/2018-07/2019

- Used over 60 000 survey response / image pairs to develop a publically available web app which can identify up to 37 different galaxy morphologies. Final model is a lightweight deep CNN, implemented in Keras / Tensorflow.
- Deployed a scalable web api using flask, uwsgi, swagger and nginx. Developed a full front end web site to demonstrate the functionality of the api; available: https://galaxy-morphology-predictor.herokuapp.com/.

Customer Loyalty Prediction Competition / Web Application   01/2019-07/2019

- Placed in the top 3% of over 4000 competitors predicting customer loyalty given past credit card histories.
- Used extensive cross-validation and permutative feature importance scores to identify over 100 key metrics.
- Deployed a scalable web application using flask and nginx which further identified some of the key problems found in models trained for the competition metric; available: https://customer-loyalty-prediction.herokuapp.com/.

Education

Post Graduate Certificate, Data Science, Brainstation   06/2018 - 09/2018

- Learned and implemented state-of-the-art data science solutions in areas such as: NLP, Time-Series, and Computer Vision.
- **Relevant Skills:** Python, SQL, Tableau, Apache Spark, and Hadoop.

Bachelor of Applied Science, Engineering Physics, Queen's University   09/2014 - 11/2017

- **Relevant Skills:** Computational Programming, MatLab, Linear Algebra, Vector Calculus, Differential Equations.