Daniel Allen

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Summary

Machine learning software engineer and data scientist with 3 years of cross-disciplinary individual and collaborative academic research project experience. Knowledge of designing and deploying software algorithms and machine learning models with challenging data sets and able to effectively communicate technical concepts to professionals from other fields such as medical surgeons. Passionate about engineering and applying ML techniques to real world problems.

Technical Skills

- **Languages and Libraries**: Python, Tensorflow, Keras, Numpy, Pandas, Seaborn, Scikit, LightGBM, Bash, SQL, MATLAB, C++, Java, HTML5
- **Technologies**: Linux, Git, Docker, GCP, CMake
- **Toolkit**: Terminal, SSH, Vim, Regex, LaTeX, 3D Slicer, ITK, ITK-Snap, ImageJ, Microsoft Office
- **Key Skills**: Statistical Analysis, Regression, Classification, Computer Vision, Time Series, Data Visualization, Data Preparation, Data Scraping, ML Algorithms, Principal Component Analysis (PCA), Biomedical Imaging, Teaching

Education

- **Western University** — London, ON
  Masters of Engineering Science in Electrical & Computer Engineering M.E.Sc — *Sept. 2017 – Feb. 2020*
- **Western University** — London, ON
  Bachelor of Engineering Science in Computer Engineering B.E.Sc — *Sept. 2013 – April. 2017*
  - **University of Western Ontario Gold Medal in Computer Engineering**: Awarded for highest grade in program.

Experience

- **Western University** — London, ON
  Graduate Teaching Assistant — *2017 - 2019*
  - **Teaching Assistant - Introduction to Electrical Engineering**: Course teaching engineering undergraduate students electrical circuits and electrical engineering principals. Involved running labs and grading.
  - **Teaching Assistant - Programming Fundamentals for Engineers**: Course for teaching object oriented programming to undergraduate engineering students.
- **McMaster University** — Hamilton, ON
  NSERC USRA Research Student — *May 2014 - Aug 2014*
  - **Automated gait analysis**: Used digital signal processing techniques on inertial measurement units to analyze and categorize patient by their walking gait.

Projects

- **LifeStyle AI**: Food and fitness app with multivariate time series body weight prediction using an LSTM in Tensorflow with macro nutrient and food recommendation.
- **Automated Segmentation of Temporal Bone Structures**: Masters thesis on the automatic segmentation of critical anatomy within the ear for the purpose of creating 3D models for surgical simulation. Designed and implemented accurate segmentation algorithms using a variety of computer vision techniques such as multi-atlas based methods and convolutional neural networks.
- **U-net for Segmentation of Lungs from CT Images**: A U-net convolutional neural network for segmenting lungs from the luna-16 dataset.

Recent Journal Publications

- **Automated Segmentation of the Sigmoid Sinus using a Multi-Atlas Approach**: D. G. Allen et. al, 2019
- **Multi-atlas segmentation of the facial nerve from clinical CT for virtual reality simulators**: Brad Gare, D. G. Allen, et. al, 2019
- **Morphological analysis of sigmoid sinus anatomy: clinical applications to neurotological surgery**: Kylen Van Osch, D. G. Allen, et. al, 2019

Relevant Course Work

Machine Learning, Deeplearning.ai Coursera, SQL for Data Scientists, Data Analytics, Discrete Math, Linear algebra, Calculus, Digital Logic, Image Processing, Business, Statistics