Daniel Allen

Email : dallen@danielallen.io

Summary

Software engineer with machine learning research experience. Knowledge of designing and deploying software, data pipelines, and building and training machine learning models.

Technical Skills

- **Languages and Libraries**: Java, Python, Guava, BigQuery, Tensorflow, Keras, Numpy, Pandas, Scikit, LightGBM, Bash, SQL, MATLAB
- **Technologies**: Linux, Maven, Git, Gitlab, Docker, Google Cloud, CMake
- **Toolkit**: IntelliJ, VSCode, Jupyter Notebooks, Terminal, SSH, Vim, LaTeX, 3D Slicer, ITK, ImageJ, Google Docs and Microsoft Office
- **Skills**: Simulation, Pipelines, Big Data, Testing, Re-factoring, Debugging, CI/CD, Statistical Analysis, Regression, Classification, Computer Vision, Time Series, Data Visualization, Data Preparation, ML Algorithms, Principal Component Analysis (PCA), Biomedical Imaging, Teaching

Experience

- **Ocado Technology** — Hatfield, UK
  Software Engineer — *Feb. 2021 - Present*
  - **Data Manipulation**: Creating a program to manipulate simulation input data to meet configurable statistical distributions and targets.
  - **Simulation Fidelity**: Improving the accuracy and confidence in simulations of automation control systems. Built reporting systems, pipelines, data objects, and event schema to analyze data from production and corresponding simulations.
  - **Warehouse Automation**: Implementing algorithms for new layouts, robots, and hardware. Creating simulation experiments to test and validate the performance of the warehouse with various possible configurations.
- **Western University** — London, ON, Canada
  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, Canada
  NSERC USRA Research Student — *May 2014 - Aug 2014*
  - **Automated gait analysis**: Used digital signal processing techniques on inertial measurement units to analyze and categorize patients by their walking gait.

Education

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

Projects

- **LifeStyle AI**: Food and fitness app with multivariate time series body weight prediction with macro nutrient and food recommendation.
- **Automated Segmentation of Temporal Bone Structures**: Masters thesis on the automatic segmentation of anatomy within the ear for the purpose of creating 3D models for surgical simulation. Created segmentation algorithms using a variety of computer vision techniques such as multi-atlas based methods and convolutional neural networks.

Key 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