

SUMMARY

Software engineer with industry and academic machine learning research experience. Knowledge of designing and deploying software, building and training machine learning models, and working with challenging data.

TECHNICAL SKILLS

- **Languages and Libraries:** Java 17, Python, BigQuery, Tensorflow, Keras, Numpy, Pandas, Scikit, LightGBM, Bash, SQL, MATLAB, C++
- **Technologies:** Linux, Maven, Git, Gitlab, Docker, Google Cloud, CMake
- **Toolkit:** IntelliJ, VSCode, Terminal, SSH, Vim, LaTeX, 3D Slicer, ITK, ImageJ, Google Docs and Microsoft Office
- **Skills:** Simulation, 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 (E2) Feb. 2021 - Present
 - **Simulation Fidelity:** Improving the accuracy and confidence in simulations of automation control systems. Built reporting systems, data objects, and event schema to analyze data from production and corresponding simulations.
 - **Warehouse Automation:** Implementing algorithms for new layouts and hardware. Used simulations to test and validate the performance of the warehouse with new
- **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 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 customized 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.

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:** Kylan Van Osch, D. G. Allen, et. al, 2019