Alexander Peplowski

alexander.peplowski@gmail.com

Education

Master of Science, Machine Learning | Mila & University of Montreal | GPA 4.0/4.3 | 2019 – Present

Fields of Study:

- Machine Learning (principles, including deep learning models)
- Data Science (strategies for applying machine learning to complex data sets)
- Algorithms (complexity, recurrence, design strategies)

Master of Engineering, Electrical Engineering - Systems Control | University of Toronto | 2013 – 2014

Fields of Study: Mobile robotics, control theory, advanced linear algebra, project management

Bachelor of Engineering, Honors Electrical Engineering | McGill University | 2009 – 2013

Projects

Automated Robotic Inspection in Low-Data Environments (2020)

- Developed deep learning object detector models designed for a low-data, embedded environment
- Presented results at Montreal AI Symposium 2020 (Link to video abstract)

Solar Radiation Forecasting from Satellite Imagery (2020)

- Built an image processing pipeline for regression from scratch for use on large dataset (>1TB)
- Applied 3D CNN and RNN deep learning models using TensorFlow 2.0 for forecasting solar radiation
- Applied agile methodologies using Git, Kanban, pull requests, peer review for group collaboration

Winner, PharmaHacks 3-day Hackathon (2019)

- Built a ML pipeline and regressor to identify and forecast pharmaceutical supply chain issues

CMC Electronics Ground-Based Augmented GPS (GBAS) Program (2019)

- Developed and released safety-critical models for estimation of GPS signal availability and reliability

Experience

Research Intern | Hydro-Québec's Research Institute (IREQ) | May 2020 – Present

- Refined and deployed single-shot convolutional neural network object detectors on field robots
- Improved training robustness in a low-data setting with dataset augmentation and saliency mapping

Software Engineer | CMC Electronics | 2014 – 2019

- Developed and released production C++ code for real-time, safety-critical aircraft navigation systems
- Optimized embedded software libraries to improve performance
- Developed and debugged multi-threaded applications

Skills

Programming: Python**,** TensorFlow 2.0, Pytorch**,** Pandas, Numpy, C++ and C
Software: Visual Studio, Git, Linux, JIRA**,** Simulink, Vim, TensorRT, Tensorboard, MLFlow
Languages: English and French