Alexander Peplowski

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Education

Master of Science, Machine Learning | Mila & University of Montreal | GPA 4.0/4.3 | 2019 – May 2021

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 - Control Systems| University of Toronto | 2013 – 2014

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

Experience

Data Science Teaching Assistant | University of Montreal | Sept 2020 – Dec 2020
- Taught lab sections for DS topics: scikit-learn, feature selection, hyperparameter searching, OpenCV

Machine Learning Research Intern | Hydro-Québec's Research Institute (IREQ) | May 2020 – Dec 2020
- 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 multi-threaded applications and developed embedded software applications

Projects

Machine Learning for 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)

Machine Learning for 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 for forecasting solar radiation

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

Skills

Programming: Python, C++, C, TensorFlow, Pytorch**,** Pandas, Numpy, OpenCV, scikit-learn
Software: Linux, Git, TensorRT, TensorBoard, MLFlow, Docker, Anaconda, pip, Jupyter, Visual Studio, JIRA, Vim
Languages: English and French