MICHAEL PEET

I built my own computer!

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EXPERIENCE

Software Engineer • Bloomberg
Nov 2020 - Present

- Designed and built **live annotation pipeline** for Document Ranking Model, allowing for real-time performance monitoring
- Developed PySpark libraries for HDFS dataset retrieval and filtering, used company-wide
- Built pipeline using Kafka to ingest documents from SOLR datastore to HDFS storage for model training

Software Developer • Local Line
May - Oct 2020

- Identified and fixed caching issues, **decreasing costs by $85,200/year.**
- Optimized Django n+1 queries, **improving page load times by over 5x**
- Rewrote localization and timezone support site-wide, fixing recurring timezone and DST issues

Machine Learning Intern • Bloomberg
May - Aug 2019

- Implemented **BiLSTM + Attention language classification model to classify news vs opinion articles with 93% F1**
- Improved timing accuracy for model inference and fixed unexpected behaviour in C++ model training framework
- Reduced variability in model evaluation scoring by adding cross validation, and improved error breakdown
- Researched combining MinHashes of tokens and Brown Clusters as features for Soft-Margin SVM

Computer Vision Intern • Miovision
Sep - Dec 2018

- Improved data augmentation methods and learning rate decay schedule, **resulting in 61% decrease in false negative rates** in production object detection model
- Received company-wide recognition for **resolving critical detection issues** with production model causing incorrect traffic light signalling
- Isolated and removed bottlenecks in training infrastructure, **making model training 2x faster**
- Researched improving RMSProp optimizer with **cyclic learning rate**, resulting in better model accuracy and faster training
- Rewrote Smooth L1 loss function in Tensorflow resulting in model with 50% decreased false positive rate
- Created Synthetic Data using CARLA Simulator to improve model performance on underrepresented classes and challenging conditions

Software Developer Intern • Miovision
May 2017 - Apr 2018

- Utilized Ruby-Prof for performance profiling; fixes **made report generation 200x faster, PDF generation 6x faster**
- Optimized n+1 queries, **improving page load times by 2.3x**
- Decoupled long running tasks into workers, **saving $21,800 yearly**
- Diagnosed and fixed a complete product outage in under 4 hours

Software Developer Intern • BuildDirect
Sep - Dec 2016

Software Developer Intern • Videostream
Jan - Apr 2016

SKILLS

Python | C++ | JavaScript | Bash | SQL | Ruby

Tensorflow | Keras | Pytorch | Scikit-learn | OpenCV

PySpark | Kafka | Docker | React | Django

ACHIEVEMENTS

MioWay Award
Outstanding work on Miovision's Computer Vision Team

Voestalpine Award
Outstanding Design Elegance for our Fourth Year Design Project, SLAP.

Dean's Honours List
In my graduating year

EDUCATION

Mechatronics Engineering, Honours BASc
Artificial Intelligence Specialization

University of Waterloo

Sept 2015 – June 2020

Relevant Courses

- Data Warehousing and Mining
- Introduction to Machine Learning
- Computational Statistics and Data Analysis

PROJECTS

EfficientNet
- Presented paper and implementation to Machine Learning Group at Bloomberg

Tensorflow Model Pipeline
- Tensorflow data pipeline to aggregate data into tfrecords for faster training, and export trained models as frozen graphs

SLAP.
- Help drivers find nearby parking using information from embedded sensors
- Provide lot owners with insight into parking trends with analytics dashboard