PETER JUNG

Senior Machine Learning Engineer

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EXPERIENCE

Senior Machine Learning Engineer at leadiQ, San Francisco Bay Area

NOVEMBER 2022 - current (full-time, contract-based)

- Migrated in-house data pipeline into Databricks, running on Spark and Delta Tables.
- Deployed models on Databricks' serverless model endpoints.
- Fine-tuned and served GPT3 models.
- Created prompts for the best behaviour from pretrained one/few shot models.

Researcher at Emplifi Inc., Prague, CZ

NOVEMBER 2020 - NOVEMBER 2022

- Increased the accuracy of the multilingual sentiment analysis (PyTorch) by 21%.
- Created a multi-modal (image and text input) model written in TensorFlow that reduces the workload of the other team by 84%.
- Optimized existing models to have more than 50% faster inference speed and lower memory usage.
- Implemented a reverse image and video search engine with PyTorch and FAISS.
- Created an extreme text classification system with APIs for training and inference management, with an automatic training pipeline in Databricks.
- Assured that experiments were fully reproducible using tools like MLflow, Git, DVC, Docker.
- Started Python educational group.

MLOps at Pilotcore Systems Inc., Toronto, CA

MARCH 2022 - JUNE 2022 (part-time, contract-based)

- Delivered machine learning infrastructure based on Terraform (Terragrunt) infrastructure as code (IaC) on AWS.
- Configured AWS EKS (Kubernetes) with EC2 and Fargate workers.
- Deployed MLflow and Airflow to Kubernetes, including KEDA auto-scaling, XComs stored in S3, and workers configured for Fargate and EC2.
- Wrote case studies and blog posts about the whole process and outcome, available at https://pilotcoresystems.com/insights/.

Software & Machine Learning at Heureka Group, a.s., Prague, CZ

JULY 2019 - OCTOBER 2020

- Designed the architecture of the whole system, including the NLP and boosted trees model, for automatic product pairing, using Kafka for message streaming, Docker for deployment in Kubernetes, PyTorch and TensorFlow as deep learning frameworks.
- Redesigned and developed the core of the main back-end microservice, serving thousands of requests per second faster, migrated from Flask to FastAPI, serving data from MySQL.
- Introduced Apache Kafka for real-time data streaming.

Full Stack Developer at M7, s.r.o., Bratislava, SK

JULY 2017 - JULY 2019

- Built back-end and front-end components for marketing and reporting systems for BMW, GGTabak and other big companies.

EDUCATION

Master's degree
Artificial Intelligence
Czech Technical University
2018 - 2020

Bachelor's degree
Automotive Mechatronics
University of Technology
2015 - 2018

SKILLS

Software Development
6 years

Python
5 years

Machine Learning
4 years

AWS
2 years, 3x certified

MLOps
2 years

LANGUAGES

English, Czech, Slovak
Fully communicative

French
Beginner

ACHIEVEMENTS

MLPrague Speaker
Biggest European ML conference.

Top 1% Vetted Developer
Accepted at Turing.com, Gun.io, Adevait and others.

PUBLICATIONS

On Discovering Interesting Combinatorial Integer Sequences

FEBRUARY 2023

Study the problem of generating interesting integer sequences with a combinatorial interpretation.

Graph Generation with Graphon Generative Adversarial Networks

SEPTEMBER 2022

In this work, we develop an elegant GAN model, called GraphonGAN, which uses graphons implemented by neural networks as generators and graph neural networks as discriminators.

Using Machine Learning to Detect if Two Products Are the Same

MAY 2020

We investigate ways to use machine learning in the e-commerce field, with an application for the problem of pairing different descriptions of the same product from various online shops.

PROJECTS

PyTorch - Deep Learning Framework

OPEN-SOURCE CONTRIBUTOR

- Fixed memory leak in the CyclicLR, learning rate scheduler.

Hugging Face's Transformers - State-of-the-art Machine Learning for JAX, PyTorch and TensorFlow

OPEN-SOURCE CONTRIBUTOR

- Fixed DetrHungarianMatcher and YolosHungarianMatcher.

MLFlow - Open source platform for the machine learning lifecycle

OPEN-SOURCE CONTRIBUTOR

- Added versions to the exported models.

TensorFlow Swift API - Swift for TensorFlow Deep Learning Library

OPEN-SOURCE CONTRIBUTOR

- Implemented Bidirectional RNNs.
- Further expanded Bidirectional RNNs by adding average, multiply and stack modes.

PyPika - Python Query Builder

OPEN-SOURCE CONTRIBUTOR

- Added `USE INDEX` to the API.
- Added support for `COLLATE` to the API.
- Added property if two tables are already joined in the SQL.
- Added support for BITWISE AND.

TensorFlow Swift Models - Models and examples built with Swift for TensorFlow

OPEN-SOURCE CONTRIBUTOR

- Fixed epoch counting in the BERT training.

SwiftXGBoost - XGBoost machine learning framework for Swift

OPEN-SOURCE AUTHOR

Swift wrapper for XGBoost gradient boosting machine learning framework with Numpy and TensorFlow support.