Brian Pulfer

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Education

UNIGE - University of Geneva — Geneva, GE, CH
Ph.D. in Machine Learning for anti-counterfeiting and anomaly detection — *Nov. 2021 – Now*

USI - University of Southern Switzerland — Lugano, TI, CH
Master Degree in Artificial Intelligence (GPA: 9.1/10) — *Aug. 2019 – Jun 2021*

SUPSI - University of Applied Sciences of Southern Switzerland — Manno, TI, CH
Bachelor Degree in Computer Science (GPA: 4.9/6) — *Aug. 2016 – Jun 2019*

Experience

Machine Learning Intern — July 1st, 2020 – August 31st, 2020
University of Southern Switzerland — *Lugano, TI, CH*

- Automatic collection and cleaning of a dataset through web crawling and heuristics such as feature extraction, clustering and outlier identification.
- Used the Tensorflow Keras framework for transfer learning of various image-classification models such as VGG-16, VGG-19, GoogLeNet, DenseNET and similars.
- Used the Pytorch framework for image segmentation and object detection with known architectures such as Single-Shot Detector (SSD) and YOLO.

Hackathons & Competitions — Nov. 2019 – Now

- START Hack 2021
- USI Hackathon 2019

Business Employee — Jun. 2016 – August 2016
KazMunayGas Trading AG — *Paradiso, TI, CH*

- Creation of a digital database of past invoices and documents that were only physical.

Broadcast soldier — Mar. 2015 – January 2016
Swiss Army — *Wangen an der Aare, BE, CH* *Bremgarten, AG, CH* *Lenzerheide, GR, CH*

Projects

Master Thesis | *Python3, C#, Keras, pandas, Unity, Git, Conda, cv2* — September 2020 – June 2021

- Assembled a physical DonkeyCar using a JetsonNano computer and an RC car.
- Created a simulated scene of a real-world lab room in Unity. Improved the Unity simulator to log testing metrics.
- Collected data, trained and tested different DL models for self-driving in the simulated and real world tracks.
- Adapted CycleGAN to translate simulated images to real ones and train a real-world Cross-track-error predictor.

Bachelor Thesis | *Python3, Git, Unittest, Gensim, PyJNIus, Keras, SkLearn* — May 2019 – Sep 2019

- Developed a binary classifier machine learning model that can tell if two scientific articles from the PUBMED database were published by the same author. Work commissioned by La Roche AG.
- Implemented feature extraction code, also using a Java library inpython through the PyJNIus library. Used the Gensim library to apply doc2vec techniques, a novelty in the literature of AND.
- Trained and tested different models: KNN, SVM, Random Forest and Feed-Forward Neural Networks.
- Studied ambiguity level in the PubMed dataset by counting the cardinality of the namespaces.

Leadership & Awards

Formula USI organizer — Nov. 2020 – Today
Lugano, TI, CH

- Organizer of the first edition of the Formula USI competition by the University of Southern Switzerland.

Winner of the SODESKA scholarship — April 2021
Lugano, TI, CH

- I won a scholarship awarded to the 5 swiss students which obtained he highest GPA at USI (University of Southern Switzerland) during their previous year of studies (minimum 54 ECTS).

Technical Skills

Languages: Python, Java, C/C++ HTML/CSS/JavaScript, C#, SQL
Frameworks: Pytorch, Tensorflow, Keras, Unity, Unittest, Node.js, React, Bootstrap
Developer Tools: Git, Bash, Docker, PyCharm, IntelliJ, WebStorm, Anaconda / Conda, Postgres, Visual Studio
Libraries: Scikit Learn, OpenCV 2, NumPy, Matplotlib, Pandas