

CAN YILMAZ ALTINIGNE

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EDUCATION

Ecole Polytechnique Federale de Lausanne (EPFL) *September 2018 - June 2020*
M.Sc. in Computer Science *GPA: 5.1 / 6*
Lausanne, Switzerland

Istanbul Technical University *September 2013 - June 2018*
B.Sc. in Computer Engineering *GPA: 3.72 / 4*
Istanbul, Turkey

- Graduated with the highest GPA in the department.

WORK EXPERIENCE

◇ **AXA Advanced Engineering Lab** *July 2019 - September 2019*
Data Scientist Intern *Lausanne, Switzerland*

- Impact evaluation of several types of natural disasters on buildings and roads by applying image segmentation on pre and post-disaster aerial images.
- I increased the mean IoU of road segmentation model from 0.608 to 0.617 using D-Linknet with Pixel Deconvolution layers (Top 20 out of 100 in DeepGlobe Road Segmentation Competition).
- I increased the mean IoU of building segmentation model from 0.68 to 0.756 using Resnet UNet with Squeeze and Excitation layers (Top 20 out of 100 in INRIA Aerial Image Labeling Dataset).

Technologies used: TensorFlow, OpenCV, Numpy, QGIS

◇ **CERN** *June 2017 - August 2017*
Software Engineer Intern *Geneva, Switzerland*

- Development of the front-end part of the new web portal for the CERN's DB on Demand service and the participation in IT and Particle Physics lectures for Summer Students at CERN.

Technologies used: Angular 2, PostgreSQL, Karma, Jasmine

Project Report: cdsweb.cern.ch/record/2278297

◇ **ASELSAN** *June 2016 - July 2016*
Software Engineer Intern *Ankara, Turkey*

- Development of an augmented reality application which shows the locations of different types of watercrafts with respect to a specific ship on the electro-optical camera view.

Technologies used: Java, JavaCV, OpenCV, FFmpeg

RESEARCH EXPERIENCE

◇ **EPFL Computer Vision Lab** *September 2019 - Present*

- Research on self-supervised training of multi-object proposal-based segmentation at EPFL Computer Vision Lab headed by Prof. Pascal Fua.

◇ **Swiss Data Science Center** *February 2019 - September 2019*

- I trained a combined model to find accurate human pose segmentation masks and joint locations on human body concurrently. I compared the performance of U-Net and Harmonic Networks for this task.
- I used the combined model to predict human weights and heights from full body single-person images.

Technologies used: Keras, Pytorch, OpenCV, OpenPose and Mask R-CNN.

Code: github.com/canaltinigne/Human-Pose-Estimation-Joint-Detection

- I implemented several efficient compression algorithms using SDSL-Lite (a C++ Succinct Data Structure Library).
- I worked on an algorithm that checks if a DNA subsequence comes from forward sequence or opposite sequence of DNA which can be used for FASTQ file compression.

Technologies used: C, C++ and SDSL-Lite

Code: github.com/canaltinigne/FASTQ-Forward-Read-Adjuster

PROJECTS

◇ **Green Growth Book Visualization**

September 2018 - February 2019

Stanford University

- This project is a spatial table of contents for the published book in the scope of Natural Capital Project of Stanford University. We visualized the data of environmental projects around the world. This project is selected for the presentation in 2019 Natural Capital Symposium at Stanford University.

Technologies used: Javascript, D3, Leaflet, QGIS.

Code: github.com/charlottegiseleweil/GreenGrowth

◇ **Tweet Sentiment Classification Project**

November 2018 - December 2018

Ecole Polytechnique Federale de Lausanne (EPFL)

- We predicted if a tweet has positive or negative sentiment using CNN, LSTM, GRU and Bi-LSTM on a dataset which includes 2.5M tweets. In the end, we get 0.865 accuracy in the test set which placed us in Top 15 out of 60 teams.

Technologies used: Numpy, Scikit-Learn, Keras, Pandas

◇ **Bachelor's Thesis**

February 2018 - June 2018

Istanbul Technical University

- I aimed to model the limit order flows and predict limit order features in exchange markets with several discrete distributions using R and Python. I performed a time series analysis on average price level with ARMA, ARIMA and LSTM models.

Technologies used: Python, R, Scikit-Learn, Keras and Scipy

PUBLICATIONS & PREPRINTS

1. **Can Yilmaz Altinigne**, Harun Ozkan, Veli Can Kupeli and Zehra Cataltepe. An Empirical Study on Arrival Rates of Limit Orders and Order Cancellation Rates in Borsa Istanbul. *Preprint: arXiv:1909.08308*.
2. Serif Bahtiyar, Mehmet Baris Yaman, and **Can Yilmaz Altinigne**. A Multi-Dimensional Machine Learning Approach to Predict Advanced Malware. *Computer Networks*. 2019.
3. Mehmet Baris Yaman, **Can Yilmaz Altinigne** and Serif Bahtiyar. A Machine Learning Approach to Predict Advanced Malware. In *Proceedings of the Second International Balkan Conference on Communications and Networking*. 2018.

ENGINEERING SKILLS

Programming Languages	Python, C, C++, Javascript, Java, R, HTML, CSS
Libraries & Frameworks	Pytorch, Keras, Tensorflow, Scikit-Learn, Pandas, Numpy
	Scipy, OpenCV, NodeJS, Angular, Flask
Database	MySQL, PostgreSQL

LANGUAGES

Turkish	Mother tongue
English	C1 Level - TOEFL Score: 102 (September 2017)