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Can Yilmaz ALTINIGNE

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EMPLOYMENT

Swiss Data Science Center — Feb 2019 - Present
Graduate Research Assistant — *Lausanne, Switzerland*

- Implemented a ***U-Net*** based deep network for human segmentation and pose estimation from full body single-person images using ***Python***, ***PyTorch*** and ***OpenCV***. Reached the mean Dice score of ***92%*** for human segmentation.
- Worked on human height and weight estimation using the implemented network and surpassed the previous state-of-the-art model for height estimation task from unconstrained images by achieving ***6.13 cm*** mean absolute error.
- Currently working on a novel triplet ratio loss for deep metric learning and AI against malnutrition project.

Computer Vision Lab at EPFL — Sept 2019 - Jan 2020
Graduate Research Assistant — *Lausanne, Switzerland*

- Outperformed the baseline model for self-supervised object detection and segmentation tasks by improving the mean IoU and recall by ***7%*** and ***20%*** respectively with contour losses and optical flow estimation using ***PyTorch***.
- Integrated ***Gumbel-Softmax*** estimator into model training phase to enable backpropagation through samples.

AXA Advanced Engineering Lab — Jul 2019 – Sept 2019
Data Scientist Intern — *Lausanne, Switzerland*

- Redesigned the road and building segmentation models for disaster impact assessment using ***TensorFlow*** and ***OpenCV***.
- Improved the mean IoU of building segmentation model by ***11%*** using ***ResNet U-Net***, and increased the mean IoU of road segmentation model by ***5%*** using ***D-LinkNet*** with ***Pixel Deconvolution*** layers.

CERN — Jun 2017 - Aug 2017
Software Engineer Intern — *Geneva, Switzerland*

- Reduced the load time and improved the user interface of CERN's Database on Demand service using ***Angular*** and ***TypeScript*** on ***Linux***. Implemented unit tests with ***Jasmine*** and ***Karma,*** and used ***Jenkins*** for CI.
- Followed Agile software development methodologies, attended daily and weekly meetings during the project.

DAMGA Lab at Istanbul Technical University — Mar 2017 - Jun 2018
Undergraduate Research Assistant — *Istanbul, Turkey*

- Implemented several efficient compression algorithms using ***SDSL-Lite*** (a ***C++*** Succinct Data Structure Library).
- Worked on an algorithm that checks if a DNA subsequence comes from a forward sequence or opposite sequence of DNA which can be used for ***FASTQ*** file compression using Aho-Corasick algorithm and suffix arrays with ***C++*** and ***SDSL-Lite***.

ASELSAN — Jun 2016 – Jul 2016
Software Engineer Intern — *Ankara, Turkey*

- Successfully delivered a real-time augmented reality application that shows watercraft locations on optical camera view using ***Java***, ***OpenCV*** and ***FFmpeg*** on ***CentOS***. Implemented unit tests with ***JUnit***.

EDUCATION

École Polytechnique Fédérale de Lausanne - EPFL — Sept 2018 - Jul 2020
M.Sc. in Computer Science | **GPA**: 5.34 / 6 — *Lausanne, Switzerland*

- Student Assistant for Applied Data Analysis (CS-401) course (grading assignments and mentoring 10 project teams).

Istanbul Technical University — Sept 2013 - Jun 2018
B.Sc. in Computer Engineering | **GPA**: 3.72 / 4 — *Istanbul, Turkey*

PROJECTS

- **Lightweight Movie Recommendation System** (*2020*)**.** Built a movie recommendation system using ***Non-Negative Matrix Factorization*** with ***Python Flask***, ***scikit-surprise*** library and ***MovieLens-100K*** dataset. Deployed the application to ***Heroku*** server. **Link:** movinder.herokuapp.com
- **Green Growth Book Visualization** (*2019*). Visualized the data of environmental projects around the world using ***Javascript***, ***D3.js***, ***Leaflet.js*** and ***QGIS***. Presented at Stanford University. **Link**: viz.naturalcapitalproject.org/GreenGrowthBook/
- **Twitter Clone App** (*2017*)**.** Implemented a social media platform with ***Flask***, ***HTML*** and ***Bootstrap*** for front-end, ***PostgreSQL*** and ***Psycopg2*** for back-end. **Link:** github.com/itucsdb1617/itucsdb1617

PEER-REVIEWED PUBLICATIONS

1. **Can Yilmaz Altinigne**, Dorina Thanou and Radhakrishna Achanta. Height and Weight Estimation From Unconstrained Images. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. 2020.
2. Serif Bahtiyar, Mehmet Baris Yaman* and **Can Yilmaz Altinigne*.** A Multi-Dimensional Machine Learning Approach to Predict Advanced Malware. *Computer Networks.* 2019. (*:equal contribution.)
3. Mehmet Baris Yaman, **Can Yilmaz Altinigne** and Serif Bahtiyar. A Machine Learning Approach to Predict Advanced Malware. *Proceedings of the Second International Balkan Conference on Communications and Networking*. 2018.

SKILLS

- **Programming Languages & Database:** Python, C, C++, Javascript, Java, R, Shell scripting, MySQL, PostgreSQL.
- **Web Development:** HTML, CSS, Bootstrap, Node, Angular, Express.js, Flask, jQuery, Karma.
- **Data Science:** PyTorch, Keras, Tensorflow, Scikit-Learn, Spark, Pandas, Numpy, Scipy, OpenCV.
- **Tools & Testing:** Git, Jenkins, QGIS, Docker, JUnit, Karma, Jasmine.