Federico **Izzo**

MACHINE LEARNING ENGINEER - MLOps ENGINEER

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Skills

Programming	Python (expert), Bash (proficient), C (intermediate), TS/JS (intermediate), Rust (beginner), Java (beginner).
Python Lib	PyTorch, Numpy, Pandas, Scikit Learn, Matplotlib, xarray, SciPy.
Misc	Linux (expert), Docker (proficient), SQL (proficient), Git (proficient), Airflow (inter.), Kubernetes (beginner).
Languages	English (professional working proficiency), Italian (native).

Work Experience

Machine Learning Engineer
Trento, Italy

BRUNO KESSLER FUNDATION
Jan 2021 – now

- Built a tool for the abstraction of the usage of containerization for the lifecycle of a Deep Learning model inside SLURM environments.
- Developed hyper-resolution ($300m$ to $10m$) deep convolutional networks for Sentinel-2 UAV images.
- Started experiencing with Kubernetes and other SOTA tools for DevOps and MLOps world.

Machine Learning Engineer
Trento, Italy

BRUNO KESSLER FUNDATION
Jan 2020 – Jan 2021

- Deployed a full production pipeline of ~ 80 docker containers with Apache Airflow for predictive models in the field of agriculture.
- Devised time-series regressor with Recurrent and Convolutional Neural Networks for estimation of ripening of a plant.
- Designed solutions for the integration of georeferenced data using GDAL/GIS suite.

Education

Master's degree in Artificial Intelligence Systems - Computer Vision path
Trento, Italy

UNIVERSITY OF TRENTO
Sep 2021 – Exp: Sep 2023

Bachelor's degree in Computer Science
Trento, Italy

UNIVERSITY OF TRENTO
Sep 2018 – Jul 2021

- Grade: 110/110. GPA: 4.0.

Projects

Camera Pose Estimation ⤢
ML, DL, COLMAP, Python

TEAM LEADER

- Proposed a dataset generation pipeline through structure from motion techniques: mapped an entire floor of $700m^2$.
- Implemented deep learning models for absolute and relative pose estimation with mean absolute error of $1.3m$ on the custom dataset.
- Created a FastAPI application to deploy the final model on a Bootstrap Vanilla JS frontend.

Domain Adaptation ⤢
ML, DL, DA, Python

TEAM LEADER

- Tested SOTA technique for the domain adaptation task in the field of Computer Vision.
- Proposed a DL model with original contributions increasing general accuracy of $\sim 2\%$ during the domain change.
- Generated a modular development environment for the Adaptiope dataset.

Eating Planner for Organized Creature ⤢
TypeScript, NestJS, MongoDB, CI, CD

TEAM LEADER

- Developed a Node.js FoalTS REST API to arrange a meal planner based on user preferences using a MongoDB storage with more than 5000 recipes.
- Designed a responsive Bootstrap Web App to interact with the REST API.
- Implemented a pipeline for continuous integration (Travis CI and GitHub Actions) and continuous deployment (Heroku).

File Analyzer ⤢
C, Unix, SystemProgramming

TEAM LEADER

- Built a multi-process and multi-thread solution in C that is able to analyze 51 files/seconds and produce statistics o top of them.
- Worked with low-level API of UNIX structure.