

# Federico Izzo

MACHINE LEARNING ENGINEER - MLOPS ENGINEER

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## Summary

Currently attending Master's degree in Artificial Intelligence and working for Bruno Kessler Foundation in Trento, Italy. I'm specialized in Deep Learning, in particular in the lifecycle of a model from development to production, and I would like to enhance my experience with MLOps. I am also a GNU/Linux enthusiast with good problem solving abilities, loving immutable and reproducible environments, currently using NixOS.

## Work Experience

### Machine Learning Engineer

Trento, Italy

BRUNO KESSLER FOUNDATION

Jan 2021 – now

- Created a tool for the abstraction of the usage of containerization for the lifecycle of a Deep Learning model inside SLURM environments.
- Developed hyper-resolution 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 FOUNDATION

Jan 2020 – Jan 2021

- Deployed a full production pipeline with Apache Airflow for predictive models in the field of agriculture.
- Developed a solution for a time series problem using python and pytorch.
- Designed solutions for the integration of georeferenced data using GDAL/GIS suite.

## Education

### Master's degree in Artificial Intelligence Systems

Trento, Italy

UNIVERSITY OF TRENTO

2021 – now

- Relevant courses: Machine Learning, Deep Learning, Computer Vision, Fundamentals of AI, Bio-Inspired Artificial Intelligence.

### Bachelor's degree in Computer Science

Trento, Italy

UNIVERSITY OF TRENTO

2018 – 2021

- Grade: 110/110.
- Relevant courses: Algorithms and Data Structures, Operative Systems, Probability and Statistics, Databases, Calculus.

## Projects

### Camera Pose Estimation [CODE]

ML, DL, COLMAP, Python

OWNER

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

### Domain Adaptation [CODE]

ML, DL, DA, Python

TEAM LEADER

- Proposed a solution for the Domain Adaptation task in Computer Vision.
- Developed a solution for the Adaptope dataset.
- Enhance SOTA solutions adding original contributions.

### Eating Planner for Organized Creature [CODE]

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.
- Developed 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 [CODE]

C, Unix, SystemProgramming

TEAM LEADER

- Developed an multi-process and multi-thread solution in C to analyze files and produce statistics o top of them.
- Worked with low-level API of UNIX structure.