Loic Mandine

Montreal, CA | https://mdag.cyou | **Looking for Internship Summer 2024 (min. 4 months, May 2024)**

EDUCATION

MILA Institute — Montreal, CA
D.E.S.S. Machine Learning — *Graduation Date: Nov 2024*

Polytech Nice Sophia — Sophia Antipolis, France
Engineering Degree - **Applied Mathematics and Modeling & Data Science** — *Graduation Date: Sep 2022*

WORK EXPERIENCE

MARSS Group — **MONACO**
Machine Learning Engineer — *Dec 2022 - Aug 2023*

- **Develop and Deploy on-the-edge an Object Detector model for a Smart City use case**
- Help collect and categorize data from public sources but also the company's customer base (when authorized)
- Build and improve **already-existing ML tools** to help filter/validate the data and the training results (10% improvement in mAP accuracy, automated pipeline for custom dataset creation)
- Test performance and compatibility of new hardware, not only in the Nvidia world with the edge Jetson platform but also on programmable FPGA or pure server-grade CPU with Intel
- Convert existing solutions (and training data) to different frameworks

AzurIA — **Sophia-Antipolis, France**
Data Scientist (Apprenticeship) — *Sep 2021 - Nov 2022*

- **Still in its very early stages, I joined AzurIA to support the R&D team's AI projects. I had the opportunity to work on many ML-related projects.**
- **Implemented Computer Vision to-the-edge PoC that allows the Startup company to be selected for a European project.**
- **Reached 2nd place in a Hackathon, on behalf of the company, organized by BonsAPPs (Manufacturing - Defection Detection)**
- Theorize and implement an end-to-end automated self-supervised training pipeline on Remote Sensing datasets, with an active learning feedback loop, and model compression for on-device deployment; with the help of two other Ph.D. employees
- Help in the **maintenance/creation** of a home-made Computing Server, and an ML development environment.

Center Antoine Lacassgne, C.H.U Nice - DEBDS — **Nice, France**
Data Scientist (internship) — *Jun 2021 - Aug 2021*

- As a first step, the objective of this internship was to **develop and validate a machine learning model to help in the decision of malignancy of a thyroid nodule**.
- In the second step, **the performance of several machine learning methods was then compared**.
- ***This statistical study has led to the publication of a scientific article in which I will have the chance to be cited as the 3rd author.***

PROJECT EXPERIENCE

MARSS Group — **MONACO**
Machine Learning Engineer — *Dec 2022 - Aug 2023*

- Training mainly **One-Stage** CNN models for Object Detection (YOLO series of model, RTMDet) on a custom dataset (mixture of Object Detection state-of-the-art datasets, and company's data) with a lot of classes. Experiments with Vision Transformer (Efficient-Vit, ...) were also made.
- Implement an automated data pipeline to fabric a custom dataset with customed annotations and classes of interest, integrated with the company's data annotation tool

- Try **several types of Quantization** on CNNs and **benchmark on-the-edge inference latency/performance tradeoff on several Jetson devices** (Nano, Orin, Xavier) and inference engines (Onnx, TensorRT, OpenVino)

AzurIA **Sophia-Antipolis**

Data Scientist (Apprenticeship) *Sep 2021 - Nov 2022*

- Real-time Cloud Segmentation & Boat Detection: **Train re-arranged U-net for lightweight footprint, on Remote Sensing data of Cloud binary Segmentation. Train object detector on Boat Detection Aerial Image.** Then, deploy the best models on several edge devices (**TensorRT: Jetson Nano & Orin**, **OpenVino: Raspberry w/ Movidius VPU**). Package those last in an **ML app demo, showcasing model performance with different Inference Runtime**

BonsAPPs Hackathon (AzurIA company) **Bologna, Italy**

Data Scientist (apprenticeship) *Feb 2022 - Apr 2024*

- We had weekly milestones to complete. **The goal was to test a beta version of the AI marketplace BonsEyes by implementing objects applied to a specific use case.** We were introduced to **the BonsEyes marketplace-specific components and architecture,** our use-case being **Defect Detection on Manufactured items. Milestones consisted of classical end-to-end (from data collection to deployment on-devices) ML project steps but re-adapted into a special context.**

LEADERSHIP EXPERIENCE

University of Montreal - DIRO Department **Montreal, CA**

Tutor *Sep 2023 - Dec 2023*

- Animator of weekly seminar on 'Learning Linux' for students. I also help (undergrad) students with their homework and projects.