Máximo Fernández Núñez

Machine learning engineer

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Blog
maximofn.com/blog

Resume Summary

- +10 years of experience. Development of artificial intelligence systems for computer vision and generative AI using NLP and diffusion models. Optimization with TensorRT. Python, Pytorch, Numpy, Pandas, TensorRT, bash, terminal, SSH, docker, git, OpenAI API, HTML, CSS, Astro, Gradio, regular expressions, transformer architecture, HuggingFace. Experience in Jetson.

Work Experience

09/2022-present

Machine learning engineer / Generative AI & LLMs research, Sener Aeroespacial

• Development of convolutional segmentation networks, object detection using YOLO and depth.
• Workflow for creating synthetic images using generative AI with stable diffusion-based models. Thanks to this dataset, images are obtained with unusual weather conditions or configurations, making the network much more robust.
• Optimizing neural networks with TensorRT to run faster and use less memory VRAM
• Implementation of boot scripts for embedded devices. With these scripts anyone can boot an embedded device.
• Boosting the promotion of a colleague
• Mentoring of interns and juniors
• Research on the use of customized LLMs. Study of the state of the art (Llama, Mixtral, Mamba, ...), frameworks (langchain, llamaindex, ollama, ...), search (RAG), fine tuning (PEFT, SFT, RM, PPO, DPO, LoRA). Proposal of use cases in pilot projects

10/2017-07/2022

AI Engineer, Arquimea

• Development of detection algorithms with YOLO for a UAV. No longer necessary to buy a specific device for detection, saving 2000€ per UAV.
• Neural network prototype for vision-based geopositioning. In case of GPS disablement in an electronic war, the UAV is able to geoposition itself.
• Leadership in the design of a single HW and FW. Drastic reduction of design, purchasing and assembly cost.

01/2013-10/2017

Electronic engineer, Indra

• Hardware and Software design. Design, documentation, integration, testing, team work

Education

09/2005-06/2011

Electronic engineering

Universidad Complutense de Madrid

Personal Info

Location
Madrid, Spain
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Tools

Python
Pytorch
TensorRT
Computer vision
LLMs
Generative AI
Huggingface
Numpy
Pandas
Matplotlib
Git
Docker
Scikit-learn
FastAPI
SSH
Conda
Astro
Gradio
Terminal

Languages

Spanish ●●●●●● Native

English ●●●●○○ Good
EF SET 56/100 B2 Equivalent

Portuguese ●●○○○○ Basic

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Personal Projects

10/2023-11/2023

Subtify

AI to which you give a youtube or twitch video and generates subtitles translated into the language you want, distinguishing each person who speaks in the video. If you activate the subtitles in Youtube and there are several people, it puts all the subtitles in the same color, so sometimes it can be difficult to know which person is generating the subtitles.

10/2023-04/2024

GPU monitor

View temperature, percentage of use and processes of GPUs in the Ubuntu bar.

11/2023-04/2024

CPU monitor

View temperature of CPU in the Ubuntu bar.

04/2024-04/2024

RAM monitor

View temperature, percentage of use and processes of RAM in the Ubuntu bar.

04/2024-04/2024

Disk monitor

View percentage of use of disk in the Ubuntu bar.

02/2023

Alfred

LLM wizard for the linux terminal. With this wizard you can ask questions to the linux terminal, asking how to do what you want to do, it gives you the solution and proposes you to execute it.

Competitions

06/2022-09/2022

HuBMAP + HPA - Hacking the Human Body

Image segmentation of organs to detect functional tissue units (FTUs)

05/2020-08/2020

SIIM-ISIC Melanoma Classification

Detect melanomas in moles through photos

11/2020-02/2021

Rainforest Connection Species Audio Detection

Recognize animals through jungle audios

11/2020-02/2021

Cassava Leaf Disease Classification

Detect diseases in plants through photos

09/2020-12/2020

Hash Code Archive - Drone Delivery - 3rd position

Optimize the routes of drones that have to deliver packages to customers

Certifications

01/2023

• EF SET English level Certificate (56/100) – B2 equivalent

Skills

- High communication skills
- Solution proposition
- Eager to learn
- Resilience
- Creating a good environment

- Decisive attitude
- Presentation of results
- Dynamism
- Collaborate
- Improve
- Mentoring

- Teamwork
- Agility
- Proactivity
- Empathy