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Máximo Fernández Núñez

Deep learning engineer

+10 years of experience. Development of artificial intelligence systems based on neural networks for the area of edge vision. Use of technologies such as Pytorch, TensorRT, Python, C, C++, bash, docker, git.

MOST RECENT WORK EXPERIENCE

Deep learning engineer at Sener Aeroespacial

September 2022 - Present

RESPONSIBILITIES

- Development of a dataset of synthetic images created with stable diffusion for training segmentation networks.
- Create neural network architecture for computer vision perception of ground vehicles in unstructured environments.
- Optimise the machine on which all the algorithms for both perception and guidance will run.
- Lead the artificial intelligence group, to perform edge vision tasks, such as retraining and processing ofline data.

KEY ACCOMPLISHMENTS

- Optimization of models with TensorRT, reducing inference time and VRAM memory.
- I shared my knowledge with the deep learning group, to empower them to create better solutions together and do it faster.
- I mentored an intern so he could grow professionally.

Deep learning engineer at Arquimea

August 2019 - July 2022

RESPONSIBILITIES

- Computer vision algorithms. Researching and creating proofs of concept and introducing new technologies to the team.
- UAV electronics: Leading new designs both HW and FW. Choosing the right people to do them and explaining the concepts to them.
- Mentor others to accelerate their professional growth and encourage them to get involved.
- Challenge the team's processes, looking for ways to improve them.

KEY ACCOMPLISHMENTS

- I introduced video processing in the UAV, making this new functionality an added value and setting us apart from the competition.
- I developed the vision algorithms in such a way as to rule out the use of commercial devices costing €2000 per unit. This is a big saving per UAV, so that they can be sold more cheaply and stand out in the market.
- Thanks to a prototype that geo-positions itself without GPS, a new line of research for future UAVs for technological warfare has been opened up.

Electronic engineer at Arquimea

October 2017 - August 2019

RESPONSIBILITIES

- HW and FW: Design and create new technologies that are widely used by internal or external teams.
- Evolving the architecture to support future requirements.
- Proactively supporting other team members and helping them to succeed
- Challenge the team's processes, looking for ways to improve them.

KEY ACCOMPLISHMENTS

- Before my arrival there was a different HW design for each UAV and for each ground station. I unified the designs into one. This meant that 80% of the FW development of one UAV was inherited by the other UAV, thus saving months of development. It also eliminated duplicate designs doing the same thing.

Electronic engineer at Indra

May 2014 - October 2017
Hardware and Software design

Trainee at Indra

January 2013 - Mayo 2014
Hardware and Software design

PERSONAL PROJECTS

- Developing an introductory deep learning with Pytorch course in Spanish
- Alfred: Personal terminal assistant for all operating systems and languages
- MaximoFN.com: Personal web page in which I write a blog sharing content in Spanish, English and Portuguese.

COMPETITIONS

- HuBMAP + HPA - Hacking the Human Body: Image segmentation of organs to detect functional tissue units (FTUs)
- SIIM-ISIC Melanoma Classification: Detect melanomas in moles through photos
- Rainforest Connection Species Audio Detection: Recognize animals through jungle audios
- Hash Code Archive - Drone Delivery (**3rd position**): Optimize the routes of drones that have to deliver packages to customers
- Cassava Leaf Disease Classification: Detect diseases in plants through photos

SKILLS

- Deep learning
- Pytorch
- Python
- Git
- TensorRT
- Numpy
- Pandas
- Docker
- Matplotlib
- Git
- Bash

EDUCATION

Electronic engineering at the Universidad Complutense de Madrid (2005-2001)

LANGUAGES

- English: B2 EF SET English level Certificate
- Spanish: native