Yacine MERABET

Embedded software | AI engineer | DevOps

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With more than 2 years of experience in embedded systems development and 2 years as AI engineer. My background as a robotics engineer allows me to work with both embedded systems and AI areas.

PROFESSIONAL EXPERIENCE

Python developer, *Elsys Design* May 2023 – present
Valbonne, France

With Bosch, we develop python software:
- Software testing, data processing
- **CI/CD** Automation using **Jenkins/bitbucket**
- **Unit/Non regression test Development**
- **Groovy** file development
- **HTML** generation from given reports using python **jinja2**

Embedded software engineer, *CNRS* September 2021 – May 2023
Masreille, France

Part 1:
- Development of a serial communication library: I2C
- Electronic soldering of control circuits.

Part 2:
- Configure a Raspberry to take pictures at regular intervals (Canon, Nikon Cameras).
- Use of the OpenCV library for 2D image processing.
- Data merging from PiCamera, libcamera (ArduCam) of Raspberry.
- Use of GitHub for the different versions of the API.
- Image processing with OpenCV
- Development of HMI interfaces (Multi processing tasks)
- Development of I2C Serial Communication with C++
- Development of a transferable package to reproduce the installations on other raspberry systems (gitFront).

Image processing engineer, *INSA* September 2020 – March 2021
Lyon, France

Development of an artificial intelligence-based segmentation model for the detection of pulmonary embolism in COVID19 patients :
- Build a random forest model for vessel classification
- Data preparation : Annotation using 3D slicer tool
- Python scripting : Build data frames with pandas library
- Image vessel segmentation : Deep Learning (UNET)
- Using of ITK/VTK to extract relevant features and OpenCV
- Integration of RORPO (C++ library for Morphology description)
- C++ Development (namespaces and classes)
- Code versioning using GitLab platform
- 3D representation of Vessel Tree : Smoothing and Cleaning using Scikit Image library (Python)
- Cmake/ Make build (Integration of C++ files in Linux system)
- Generate Documentation using pyDoc, man (.1 file)

AI Engineer, *LISV Lab* September 2019 – March 2020
Versailles, France

Detection of paramecia in 2D images :
- Build Real Time bounding boxes in video frames to detect paramecia using **YOLO** algorithm.

• Extract paramecia shapes using openCV

Electrical engineer, *Versailles University* — February 2019 – June 2019, Versailles, France
• Photovoltaic panel installation
• Optimize electrical power : Detect best weather settings
• Simulation of the model using matlab simulink

PROJECTS

Web developer — July 2021 – August 2021
• Develop a website (portfolio) using python Django

Data analysis, *Web data analyst* — February 2020 – July 2020
• Data visualization : Websites SEO
• Development of Machine Learning to classify web data

EDUCATION

Master 2 in Robotics, *Paris Saclay* — September 2019 – December 2020, Versailles, France
• Robotic systems : Control, computer vision, RTOS, SLAM
• Data Science : Machine Learning, Deep Learning, Reinforcement Learning

Master in Automation and Robotics, *Bejaia University* — September 2017 – July 2018, Bejaia, Algeria
Control theory, Embedded systems, Algorithms

Bachelor in Automation and autonomous systems, *Bejaia university* — September 2016 – July 2017, Bejaia, Algeria

Mathematics Baccalaureat — 2013

SKILLS

Python	●●●●○	C | C++	●●●○○
Java C#	●●●○○	CMAKE MAKE	●●●●○
Linux Shell	●●●●○	Git | Markdown	●●●●○
Catia | Solidworks	●●●○○	Ms Office	●●●●●
Adobe Photoshop illustrator	●●●○○	Matlab Simulink	●●●○○
OpenCV	●●●●○	TensorFlow	●●●●○
Vs Code	●●●●○	Jupyter notebook | Spyder	●●●●○
Tkinter | PyQt5	●●●●○	gphoto2 (camera control)	●●●●○
Google cloud tool	●●●○○	Arduino | STM32	●●●●○
Raspberry Pi	●●●●○	USART, I2C, SCP, TCP	●●●●○
SQL - PowerBI	●●○○○	Assembler	●●●●○
Scikit Learn (Python)	●●●●○	ITK / VTK	●●●○○

LANGUAGES

French • English

INTERESTS

Football, Travel, Read