Salma GALAAOUI

3D Computer Vision Research Engineer

@ galaaoui[dot]salma[at]gmail[dot]com ⚲ Paris, France in linkedin.com/in/salmagalaaoui/
github.com/SalmaG98 ⚥ google scholar profile

EDUCATION

Modeling Optimization Decision Organization (M2)
Paris Dauphine University - PSL
📅 2021 – 2022
📍 Paris, France

- Major: Decision Theory
- Coursework: Algorithmic Games, Social Computational Choice, Graph Theory, Multi-Objective Optimization, Mathematical Programming

Advanced Engineering Master of Research (M2) - Incomplete
Tunisia Polytechnic School (École Polytechnique de Tunisie)
📅 2020 – 2021
📍 Tunis, Tunisia

- Major: Complex and Intelligent Systems - Advanced Automation
- Coursework: Image Processing, Advanced Robotics and Optimal Transport, Optimal Control, Advanced Control Theory, IoT Networks, System Identification and Analysis, Embedded Systems
- **coursework and internship successfully completed in 2021 - did not defend**

Preparatory Cycle & Engineering Program
National Institute of Applied Sciences and Technology (INSAT)
📅 2016 – 2021
📍 Tunis, Tunisia

- Major: Industrial Computing and Automation
- Common Core: Mathematics - Physics - Computer Science

PROFESSIONAL EXPERIENCE

Computer Vision Research Engineer - CIFRE PhD Candidate
Valeo.AI - École Nationale des Ponts et Chaussées
📅 Jul. 2024 – Oct 2027
📍 Paris - France

- Research on the topic of LiDAR based human pose estimation (HPE) in the context of Autonomous Driving.
- *1 arxiv preprint - 2025* 🔗 *arxiv*
- keywords: LiDAR/RADAR, HPE/HMR, point clouds, sparse data

Computer Vision for Human Understanding Research Engineer
NAVER LABS Europe
📅 Oct. 2022 – Apr. 2024
📍 Grenoble - France

- Leveraging computer vision for the benefit of Embodied AI. Involvement in several research projects revolving around 2D/3D hand pose estimation and human perception and understanding: contribution to ideas; data cleaning, collection, augmentation, pseudo-annotation; in charge of experiments in relation to said projects.
- *1 CVPR-W/RHOBIN - 2024* 🔗 *arxiv*
- *1 ECCV 2024 paper* 🔗 *arxiv* ⌂ *repo* ▶ *demo*
- *1 CVPR 2024 paper* 🔗 *arxiv*
- *1 ICCV-W/ACRV oral paper* 🔗 *arxiv* 🔗 *website*
- *2 US patent applications currently under review*
- keywords: Multiview/video-based hand pose estimation, Masked Image Modeling, Encoder-Decoder architecture, Blender Python API, Synthetic data generation

Computer Vision for Human Pose Research Intern
NAVER LABS Europe
📅 Apr. 2022 – Oct. 2022
📍 Grenoble - France

- Working towards accurate and robust 3D human pose estimation: Testing different post-processing methods (Gaussian Mixture Models, median filtering etc..) to improve off the shelf pose estimators in order to annotate sign language sequences for further use in sign language understanding, translation or retrieval tasks.
- keywords: human pose detection, multi-view / video-based pose estimation, Pytorch, LCR-Net, DOPE, PoseBERT

Computer Vision for Robotics Research Intern
NAVER LABS Europe
📅 Apr. 2021 – Oct. 2021
📍 Grenoble - France

- OCR-based robotic navigation: Selecting and extending implementations of popular OCR research papers that match the interest of the project, extracting and recognizing text regions in natural scenes, leveraging information present in images to extract depth and geometrical perspective from detected words in order to enhance a robot's trajectory planning.

- keywords: Pytorch Framework, DCNNs, RNNs, Lightening Mapped Databases, Perspective Projection, ROS, Gazebo simulator, roslibpy, Docker

---

Algorithmic Trading Intern
XtendPlex Group

📅 Jul. 2020 – Sept. 2020
📍 Tunis - Tunisia

- Implementing a high latency Forex algorithmic trading bot capable of simultaneously tracking sets of Forex pairs, detecting market trends and opening/closing positions based on collected data and decisions.
- keywords: C#, cAlgo API, cTrader, TWS API, Interactive Brokers

---

Embedded Systems Intern ⌘ website
Orange Developer Center & El Fab Space Lac

📅 Jul. 2019 – Oct. 2019
📍 Tunis - Tunisia

- Prototyping a home installed automatic food dispenser (sensors/actuators + camera) + smart collar (biometric sensors + GPS + GSM/GPRS).
- keywords: SolidWorks CAD, RaspberryPi 3B+, ESP32 NodeMCU, ATMega328p, SIM28, SIM900, Node-RED, MQTT, I2C, SPI, UART, TCP Socket, UDP Socket

PROJECTS & CONTESTS

Design of a Finite State Machine (Moore Machine) ◯ repo
Embedded Systems school project - TPS

📅 Dec. 2020 - Feb. 2021
📍 Tunis, Tunisia

- Designing the FSM of an electronic lock and implementing its VHDL description and test-bench to simulate I/O signals in interaction with the lock's states.
- keywords: Vivado Design Suite, VHDL, TextIO

Embedding a Diabetic Retinopathy DL model on Xilinx ZC702 ◯ repo
End of Year Project - LSA INSAT

📅 Dec. 2019 - Jul. 2020
📍 Tunis, Tunisia

- Building a convolutional neural network based on ResNet50 architecture. Optimization and testing of different quantization and pruning methods with Tensorflow then Xilinx DNNDK. Creation and configuration of the hardware platform as well as the embedded OS and application.
- keywords: Xilinx Vivado, XSDK, PetaLinux, DPU, DDNDK, TensorFlow, CNN

InnoV Challenge - IBM Winner
Samsung Academy INSAT

📅 Feb. 2020
📍 Tunis, Tunisia

- Visual recognition IBM Watson service, adding OCR Features (French and Arabic).

Smart Industry 4.0 Fair Hackathon 48H - 3rd Place
Agency of Industry Promotion and Innovation APII

📅 Feb. 2020
📍 Tunis, Tunisia

- LEONI Project: Design of a low budget Smart Closet for industrial equipment traceablity and collecting data for predictive maintenance using RFID technology.

SheSolves Problem Solving Contest - Winning Team
ACM INSAT SC & IEEE WIE INSAT

📅 Jan. 2020
📍 Tunis, Tunisia

TCPC 2k19
Tunisian Collegiate Programming Contest

📅 Sept. 2019
📍 Sfax, Tunisia

- Qualified (INSAT CPC 2019) and took part in the Tunisian CPC.

KEY SKILLS

Programming Languages : Python (Pytorch, Scipy, PIL, Matplotlib, Captum, Blender Python API etc.), C/C++, Bash scripting
Data Analysis and Processing : Pandas DF, SQL, LMDB
HPC, VC and containerization tools : SLURM Workload Manager, Git, Docker, Apptainer (formerly Singularity)
Misc. : Streamlit, LaTeX, TikZ, Inkscape, photo editing (Photopea, GIMP), CAD (SolidWorks and CATIA)

LANGUAGES

Arabic : Native
French : Bilingual Proficiency
English : C1: TOEFL iBT (2020)
German : B2 Goethe Institut (2016)