SEPIDEH SHAMSIZADEH

AI and Robotics Engineer

Swiss Work Permit Type B

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SepShams | sepideh-shamsizadeh | sepideh-shamsizadeh.github.io

HIGHLIGHTS

- Machine Learning Engineer: 3+ years of professional experience in designing, developing, and deploying machine learning pipelines.
- Computer Vision Engineer: 3+ years of research and industrial experience in computer vision techniques.
- Robotics Engineer: 2+ years of research and Bosch competition experience in Robot perception and Kinematics.

RESEARCH INTERESTS

- Computer Vision
- Robotics
- Machine Learning

EDUCATION

University of Padova
Padova, Italy
2020 - 2023

M.Sc. of Computer Engineer, AI and Robotics

- GPA: 25.8/30
- Thesis:
  - Dataset of Panoramic Images for People Tracking in Service Robotics
  - Supervisors: Prof. Emanuele Menegatti and Prof. Alberto Pretto

University of Tehran
Tehran, Iran
2014-2017

M.Sc. of Information Technology Engineering

- GPA: 16.86/20

University of Technology
Kermanshah, Iran
2010-2014

B.Sc. of Information Technology Engineering

WORK EXPERIENCE

University of Padova, IAS-lab
2022 - 2023

Robotic research assistant

Propose and implement autolabeling framework to label people in panoramic video.

- Developed and deployed advanced Camera and LiDAR Calibration and Computer Vision models, contributing to project success.
- Submitted the research findings in the respected "2024 IEEE International Conference on Robotics and Automation (ICRA 2024)".

Cineca, PRACE Summer Of HPC
2021 - 2021

Machine Learning Engineer, Intern

Developed and trained machine learning models to identify anomalies in time-series data.

- Analyzed the experimental results to determine the strengths and weaknesses of each model.

Kavosh
2017 - 2019

Machine Learning Engineer

2 years in development and deployment of machine learning algorithms.

- Developed and deployed advanced Natural Language Processing (NLP) and Computer Vision models, contributing to project success.
- Led a team in the research and development of cutting-edge machine learning algorithms, resulting in improved model accuracy by 20%.
- Collaborated closely with cross-functional teams to translate business objectives into technical solutions, ensuring alignment with project goals.

PUBLICATIONS

- A., Bacchin, L.,Barcellona, S.,Shamsizadeh, E.,Olivastri, A.,Pretto, and E.,Menegatti, 2023 Sep. PanNote: an Automatic Tool for Panoramic Image Annotation of People's Positions. Submitted in 2024 IEEE International Conference on Robotics and Automation (ICRA 2024).

- Shamsizadeh, S., Goliaei, S., & Moghadam, Z. R. (2019). CAMIRADA: Cancer microRNA association discovery algorithm, a case study on breast cancer. Journal of biomedical informatics, 94, 103180.

PROJECTS

University of Padova
2022

3D reconstruction

- Pioneered a breakthrough in 3D reconstruction using C++ and SfM.
- Expertise includes robust feature extraction, matching, and precision optimization with Bundle Adjustment and Ceres Solver.

University of Padova
2022

3D Point Cloud Segmentation with PointNet

- Developed a 3D point cloud segmentation project utilizing PointNet architecture and PyTorch for semantic labeling.
- Achieved an accuracy of 92% in model predictions, demonstrating proficiency in deep learning for 3D data processing.

SKILLS

- **Programming:** Python, C++, Matlab
- **Frameworks**: Tensorflow, PyTorch, ROS, OpenCV, Open3D, OpenGL
- **Computer Vision**: CNN, Object Detection, Object Tracking, Segmentation, 3D Vision, Transformers, Calibration
- **Tools:** Docker, GIT, Linux

CERTIFICATES

- Robotics and ROS - Learn by Doing! Manipulators, Udemy
- Advanced Computer Vision with TensorFlow, Coursera
- Deep Learning Specialization, Coursera

LANGUAGE

- English, Full professional proficiency
- Italy, Elementary proficiency

SELECTED COURSES

- Computer Vision, 3D Vision, Intelligent Robotics, Robotics and Control, Industrial Robotics.

REFERENCES

- **Prof. Emanuele Menegatti**
- Supervisor
- emg@dei.unipd.it

- **Prof. Alberto Pretto**
- Co-Supervisor
- alberto.pretto@dei.unipd.it