

# SEPIDEH SHAMSIZADEH

AI and Robotics Engineer

Swiss Work Permit Type B

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SepShams

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## 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