SEPIDEH SHAMSIZADEH

AI and Robotics

Swiss work permit B

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HIGHLIGHTS

- Machine Learning Engineer: 4+ 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

- Robotics
- Computer Vision
- Reinforcement Learning

EDUCATION

University of Padova, Italy , 2020 - 2023

M.Sc. in Computer Engineering, AI and Robotics, GPA 101/110
Thesis: Dataset of Panoramic Images for People Tracking in Service Robotics
Selected Courses: Intelligent Robotics, Robotics and Control, Industrial Robotics, Computer Vision, 3D Vision, Machine Learning, and Artificial Intelligence

University of Tehran, Iran, 2014-2017

M.Sc. in Health Information Technology Engineering, GPA 16.86/20
Thesis: A novel algorithm to identify cancer-associated microRNAs
Selected Courses: Application of Intelligence in Medicine, Probabilistic Graphical Model, and Fuzzy Decision Making System

University of Technology Kermanshah, Iran 2010-2014

B.Sc. in Information Technology Engineering
Thesis: Extracting the customer satisfaction factors of web services using clustering techniques

WORK EXPERIENCE

Eurapco, Zurich
Nov 2023- Feb 2024

Junior Project Manager

- Coordinated workshops and meetings, developed agendas, and facilitated discussions with stakeholders.
- Prepared project briefs, proposals, and documentation, ensuring alignment with organizational goals and objectives.

University of Padova, IAS-lab
Sep 2022 - Sep 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.
- Accepted the research findings in the respected "2024 IEEE International Conference on Robotics and Automation (ICRA 2024)".

Cineca, PRACE
Summer Of HPC
Jun 2021 - Sep 2021

Machine Learning, Intern
Utilized automatically annotated data and employed deep learning models, specifically LSTM autoencoders, for real-time anomaly detection and prediction in HPC systems.

Kavosh
Jun 2017 - Sep 2019

Machine Learning
2 years in development and deployment of machine learning algorithms.

- Engineered and executed advanced Natural Language Processing (NLP) and Computer Vision models, significantly contributing to the success of key projects.
- Led a team in the research and development of cutting-edge machine learning algorithms, resulting in improved model accuracy by 20%.

PUBLICATIONS

- Bacchin, A., Barcellona, L., Shamsizadeh,S., Olivastri, E., Pretto, A., and Menegatti, E. 2023 Sep. **PanNote: an Automatic Tool for Panoramic Image Annotation of People's Positions.** Accepted 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

3D reconstruction:
Implemented 3D reconstruction using Structure from Motion (SfM) in C++, integrating SIFT algorithm, Bundle Adjustment, and Ceres Solver for precise scene reconstruction.

3D Point Cloud Segmentation with PointNet:
Developed a 3D point cloud segmentation that achieved an accuracy of 96% in model predictions.

Bosch Future Mobility Challenge (2022):
Demonstrated mid-level success in autonomous driving, including line detection, curve navigation, traffic sign and pedestrian detection, and precise steering; withdrew due to personal reasons.

SKILLS

- **Programming:** Python, C++, Matlab, R
- **Frameworks**: Tensorflow, PyTorch, ROS/ROS2, OpenCV, Open3D
- **Computer Vision**: CNN, Object Detection, Object Tracking, Segmentation, 3D Vision, Calibration, SLAM
- **Tools:** Docker, GIT, Linux

HONORS

- Top 7% among more than 450,000 participants in the Iranian nationwide university entrance examination (B.Sc. Program) in the whole country (2010).
- Rank 189 among more than 30,000 participants in the Iranian nationwide university entrance examination (M.Sc. Program) in the whole country (2013).

CERTIFICATES

- Self Driving and ROS 2 - Learn by Doing! Odometry & Control, Udemy
- Robotics and ROS - Learn by Doing! Manipulators, Udemy
- Advanced Computer Vision with TensorFlow, Coursera
- Deep Learning Specialization, Coursera

REFERENCES

- **Prof. Emanuele Menegatti**
  Supervisor-University of Padova
  emanuele.menegatti@unipd.it
- **Prof. Alberto Pretto**
  Co-Supervisor-University of Padova
  alberto.pretto@dei.unipd.it
- **Prof. Zahra Razaghi Moghadam**
  Supervisor, University of Tehran
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