

VINCENZO POLIZZI

Zurich Switzerland, CH

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INDUSTRY EXPERIENCE

Research Assistant

Robotics and Perception Group - UZH

08-2022 - Ongoing

Zurich, CH

I am working on robust Simultaneous Localization And Mapping (SLAM) in challenging scenarios for AR/VR applications supervised by Prof. Davide Scaramuzza.

Software Engineer intern

IniVation AG

01-2022 - 07-2022

Zurich, CH

I worked on an event-based Visual Inertial Odometry (VIO) frontend with a third-party backend, on an extension of a camera-IMU calibration framework with additional camera models, and on a learned-based feature detector for event images.

JPL Visiting Student Research Program

NASA Jet Propulsion Laboratory

05-2021 - 11-2021

Pasadena, CA, US

I implemented a collaborative Thermal-Inertial Odometry system for UAVs. The resulting multi-UAV setup showed outstanding results concerning the baseline. Also a request-response light communication pipeline is proposed. The work is implemented in the open-source JPL xVIO framework.

Robotics Engineer Intern

Rheinmetall Air Defence

09-2020 - 05-2021

Zurich, CH

I developed the software infrastructure for an autonomous drone for inspection, airport security, and surveillance.

PROJECTS

Visual Odometry with semantic cues (2020)

ETH Zurich course by Prof. Davide Scaramuzza

I developed a Visual Odometry Algorithm that uses semantic segmentation to avoid tracking feature points on moving objects and improve feature matching.

Memory Card (2020)

ETH Zurich course by Prof. Andreas Kunz

I developed an app for iOS and Android to play the Memory card game using Mixed Reality

Monumenta (2016)

iOS and Android application, monumenta.iobii.com

The app provides tourists with a city guide using augmented reality, offering suggestions to organize a journey in the city. Six municipalities and cultural associations are involved in the project.

PUBLICATIONS

Journal Articles

- V. Polizzi, R. Hewitt, J. Hidalgo-Carrió, J. De-laune, and D. Scaramuzza, "Data-efficient collaborative decentralized thermal-inertial odometry," *IEEE Robotics and Automation Letters*, vol. 7, no. 4, pp. 10 681–10 688, 2022. DOI: 10.1109/LRA.2022.3194675.

AWARDS

Best Essay Award

at the summer school ICVSS 2022. Essay: "The societal impact of AI, its dual-use and peace-building capabilities. Discuss the topic from a research and innovation perspective, from the standpoint of one worldwide research community".

OpenCV AI Competition 2021 Phase 1 Finalists

my team used the depth camera with on-edge computing, made by OpenCV and LUXONIS (OAK-D). Our project brings the OAK technology to the Duckietown platform, enabling Depth-AI research in the Autonomous Driving Cars educational products.

The Best Freshmen Students

Prize conferred based on academic achievements in the first year of the bachelor degree.

EDUCATION

M.Sc. in Robotics, Systems and Control, 5.43/6.0

Swiss Federal Institute of Technology (ETH)

2019-2021

Zurich, Switzerland

B.Eng. in Automation Engineering, 110/110

Politecnico di Milano

2016 - 2019

Milan, Italy

LANGUAGES

Italian

English (TOEFL 107/120)

Mandarin Chinese (A1)



SKILLS

C++

Python

ROS

Docker

Swift Objective-C

Visual/thermal/event cameras

Arduino

NVIDIA DLI courses for AI on Jetson boards

Raspberry Pi