

# Panagiotis Petropoulakis - Curriculum Vitae

GitHub: <https://github.com/PetropoulakisPanagiotis> | PWP.: <https://petropoulakispanagiotis.github.io/>

I can discover patterns, combine methodologies together, and propose extensions



## EDUCATION

### M.Sc. in Computer Science

Oct. 2021 - Oct. 2024

Department of Informatics, Technical University of Munich (TUM) | Germany

Focus: **Computer Vision, Machine Learning, and Robotics**

Estimated G.P.A. 2.0 (German system)

Thesis: Scale-Aware Landmark-based SLAM in Canonical Space | Preparing a publication

Supervisors: Prof. Stefan Leutenegger | Advisors: S. B. Laina & S. Schaefer & J. Jung

### B.Sc. in Computer Science

Sep. 2015 - Sep. 2020

Department of Informatics, National and Kapodistrian University of Athens (NKUA) | Greece

Specialization: **Data, and Knowledge Management**

G.P.A. 8.16/10 (11% of graduating class)

Thesis: [A Leader-Follower Mobile Robot Scheme using an RGB-D Camera and MobileNets](#)

Supervisors: Prof. Konstantinos J. Kyriakopoulos, National and Technical University of Athens (NTUA)

Prof. Ioannis Z. Emiris, National and Kapodistrian University of Athens (NKUA)

## RESEARCH EXPERIENCE

### Chair of Robotics, AI and Real-time Systems | TUM

Oct. 2022 - March. 2023

\* **State-representation research project** | Accepted at IEEE International Conference SMC 2024

- *Task-specific grasping Autoencoder* | [IGAE](#)

- *Vision-based grasping with DRL, Sim2Real, ROS, LBR iiwa manipulator, Robotiq gripper, KinectV2 camera*

- I proposed a *Reward* function, which was also adopted by a colleague and *his research models* were trained *5X* faster

Supervisor: Prof. Alois Knoll | Advisors: J. Josifovski, and M. Malmir

### Control Systems Lab | NTUA

Feb. 2019 - Oct. 2020

\* Carried out my **Bachelor Thesis** and acquired experience in the following areas:

- *Mobile Robotics, ROS, Computer Vision, Visual Servoing, Object Detection/Segmentation/Tracking, TensorFlow*

\* **Peer-Reviewer** for the 28th Mediterranean Conference on Control and Automation (Aerial Robotics & Clustering related topic)

Supervisor: Prof. Kostas J. Kyriakopoulos

## WORKING EXPERIENCE

### Computer Vision Engineer | [DeepScenario](#)

Oct. 2023 - Oct. 2024

\* **3D Meshes** | **Linear Optimization** | **2D Object Tracking** | **Optical Flow**

\* **Optimized** road networks elevation profile to accurately fit (achieved **0.05 m error tolerance**)

with natural ground elevation contours | ASAM OpenDRIVE & OpenSCENARIO

\* Enhanced algorithm **speed** for 2D bbox collision checking, video rendering, and automated labeling

Supervisors: Dr. Holger Banzhaf, and Dr. Jacques Kaiser

### ML and Robotics Engineer | Chair of Robotics, AI and Real-time Systems | TUM

Apr. 2023 - Sept. 2023

\* Implemented a **vision-based DL model** to predict the **joints** of manipulator robot | **PyTorch**

\* Operated frequently the **LBR iiwa Manipulator** and made software improvements and demos

\* Migrated the whole robotic set-up (packages, dependencies of sensors) into a **Docker** container

\* Contributed to the [Virtual Training Platform for Robot Learning](#) project

Supervisors: J. Josifovski, and M. Malmir

### Robotics Engineer | Chair of Information-oriented Control | TUM

Jan. 2023 - March. 2023

\* Implemented an **MPC** (ipopt & ForcesPro optimizers) designed by my supervisors | [SeaClear project](#)

\* Contributed in real experiments | Franka Emika Panda manipulator

Supervisor: P. Bevanda

### DevOps | Institute of Flight System Dynamics | TUM

May. 2022 - Nov. 2022

\* Contributed in several projects and adapted fast to new technologies

\* Reported fixes/bugs in [Netdata](#) & [MATLAB](#)

\* Gained experience in:

- *GitLab CI* | registering runners, building jobs & metrics monitoring (*pandas* & *time series*)

- *VMs, Remote Servers, Docker*

Supervisor: Yi Lai

## ACADEMIC EXPERIENCE

\* Practical Course Assistant, "Simulation-Based Machine Learning in Robotics" | TUM

Spring Sem. 2023

\* Lab Assistant, "Data Structures and Programming Techniques in C" | NKUA

Spring Sem. 2018

\* Forum Instructor, "Artificial Intelligence" | NKUA

Winter Sem. 2018/19

## TECHNICAL SKILLS

\* I routinely program in **Python**. **Strong** experience also in **C/C++**

\* *Have written some lines of code in SQL, HTML, CSS, JavaScript, PHP*

\* Misc.: **Vim** (main coding editor), *LaTeX, MPI, OpenMP, Amazon S3, Apache Parquet*

## AWARDS

**Top Bachelor Thesis Award '21** | NKUA | <https://www.di.uoa.gr/en/highlights/thesis> - volume 18, page 33

## OTHER

**Nationality:** Greek

**Foreign Languages:** **English** (ECPE & IELTS Academic Certificates) | **German** (Goethe-Zertifikat A2)

**Interests:**

Sports: Basketball (Playmaker & Shooting Guard at "Mylonas" Basketball team for 7 years), Swimming,

Volunteering ([Women in CS@TUM](#) & [Save Your Hood GR](#)), Chess, Reading, BBQ Grilling