

MIROSLAV PURKRABEK

Computer Vision Researcher

 [MiraPurkrabek.github.io](https://github.com/MiraPurkrabek)

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 [PurkrabekM](#)

 [MiraPurkrabek](#)



SELECTED PUBLICATIONS

For the full list, see my website – MiraPurkrabek.github.io

Detection, Pose Estimation and Segmentation for Multiple Bodies: Closing the Virtuous Circle

[Purkrabek](#), Matas; [ICCV 2025](#)

Three small specialized models, each conditioned by the others, form a self-improving loop: *BBox-Mask-Pose*. The loop improves consistency of different representations, beats large foundation models (AP 41.3 → 49.2) and sets a new SOTA on OCHu-man in instance segmentation and pose estimation. [GitHub](#) ★ 43

ProbPose: A Probabilistic Approach to 2D Human Pose Estimation

[Purkrabek](#), Matas; [CVPR 2025](#)

ProbPose introduces a probabilistic modeling with calibrated probability maps and a presence probability, which handle partially visible individuals better and reduce false positive predictions. Using out-of-image keypoints is necessary for more reliable modeling of the underlying distribution and robust evaluation. [GitHub](#) ★ 28

Improving 2D Human Pose Estimation in Rare Camera Views with Synthetic Data

[Purkrabek](#), Matas; [Face and Gestures 2024](#)



Best Poster Award

RePoGen, a novel method for the generation of synthetic humans in unusual poses, is not focused on realism but the diversity of generated poses. Training on Re-PoGen data significantly improves accuracy for rare viewpoints (AP 69.2 → 81.1) without compromising performance on common views. [GitHub](#) ★ 48

BLANKET: Anonymizing Faces in Infant Video Recordings

Hadera, Cech, [Purkrabek](#), Hoffmann; [ICDL 2025](#)

EXPERIENCE

Researcher

[Visual Recognition Group, Czech Technical University in Prague](#)

 February 2019 – Ongoing

 Prague, CZ

- Specialized in analyzing the human body, including Pose Estimation, 3D Shape, and UV Map estimation, along with detection and segmentation
- Co-supervised more junior colleagues in writing their first papers
- Managing the annotation process for our team of annotators
- Supervised by prof. Jiri Matas

Research Assistant

[Visual Cognitive Systems lab, University of Ljubljana](#)

 October 2018 – March 2019

 Ljubljana, SLO

- Initial experience in computer vision research during my Erasmus stay
- Supervised by prof. Matej Kristan

Software Developer

[Porsche Engineering Services](#)

 March 2020 – July 2022

 Prague, CZ

- Wrote production code for Porsche's (then) most powerful supercharger
- Collaborated in a start-up-like team at CARIAD on out-of-distribution detection for autonomous driving

Head Coach + Assistant Coach

[TJ Sokol Kralovske Vinohrady \(SKV\)](#)

 August 2017 – August 2025

 Prague, CZ

- Led a floorball team to the quarterfinals of the highest Czech league

IN ONE SENTENCE

I enjoy connecting basic research with real-world applications.

RESEARCH FOCUS

Human 2D Pose, 3D Pose and Shape

Human Body

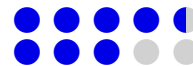
UV Map Estimation

Person Detection and Segmentation

LANGUAGES

English

French, DELF B1



Python

- All the research papers and theses
- Training new models (eg. ProbPose-h) for 10+ days on 4 GPUs using SLURM
- Porsche automated testing (daily runs)

C / embedded

- Led 3-person team
- Build and programmed autonomous robot
- Won course challenge

C++

- Plug-n-charge feature for Porsche charger
- Requirements → design → code

ACTIVITIES

Invited Talks

[CVWWs 24 and 25, SCCH Research Day](#)

Co-organized and Talked at

[AI4Sports 2024](#)

Outstanding Reviewer

[CVPR 2025](#)

EDUCATION

Ph.D. in Computer Science

Computer Vision, AI

[Czech Technical University in Prague](#)

topic: Robust Human Pose Estimation

supervisor: prof. Jiri Matas

 Feb 2023 – Ongoing (exp. 2026)

M.S. in Computer Science

AI, Computer Vision, Cyber Security

[Czech Technical University in Prague](#)

topic: Multi-object Multi-view Tracking

supervisor: prof. Jiri Matas

 Oct 2020 – June 2022

Erasmus – University of Ljubljana, SI