

# MIROSLAV PURKRABEK

## Computer Vision Researcher

 [MiraPurkrabek.github.io](#)

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 [PurkrabekM](#)

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## 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](#)

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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 OCHuman in instance segmentation and pose estimation. [GitHub](#) ★ 50+

### ProbPose: A Probabilistic Approach to 2D Human Pose Estimation

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

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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](#) ★ 30+

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

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

 Best Poster Award

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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 RePoGen data significantly improves accuracy for rare viewpoints (AP 69.2 → 81.1) without compromising performance on common views. [GitHub](#) ★ 45+

### BLANKET: Anonymizing Faces in Infant Video Recordings

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

## 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. 2027)


### 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