

# Michel Zeller

ML Engineer

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I am particularly interested in solving real-world problems in the captivating fields of (3D) computer vision, digital humans & human-centric AI. I am open to challenges, solution-oriented, well organised and a team player.

## Education

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**ETH Zurich**, D-MAVT

Sept. 2022 - Sept. 2024

Master of Science in Mechanical Engineering

Research-centred program with a focus on deep learning for computer vision and robotics

*Final Thesis*: Reconstructing Hand-Object Interactions in 3D from Monocular Video with 3DGS

**ETH Zurich**, D-MAVT

Sept. 2017 - Sept. 2021

Bachelor of Science in Mechanical Engineering

*Final Thesis*: Drone Tracking in Challenging Conditions

## Employment

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**meshcapade** R&D

Oct. 2024 - Mar. 2025

*Research Scientist Intern*

At meshcapade, I extended my previous project (reconstructing hand-object interactions) to more general human-object interactions. One major task included This mainly included building a robust data pre-processing pipeline to

**LOGIBLOX AG**

Apr. 2022 - Dec. 2023

*(Full-Stack) Software Engineer*

I mainly researched and implemented software solutions, i.e. for the in-house graph compiler, the data-science or AI modules as well as the UI of the platform. The tech stack consisted of a Python backend with Flask combined with the Angular frontend framework. [\[Reference Letter\]](#)

**MeteoSwiss** Dep. Analysis & Numerical Predictions

Sept. 2021 - Mar. 2022

*Software Engineer - Civil Service*

My main task at MeteoSwiss was developing CLI tools to visualise their global air-trajectory data using Python. Ultimately, my work replaced the previously used (expensive) software and is still in production at [github.com/MeteoSwiss-APN/pytrajplot](https://github.com/MeteoSwiss-APN/pytrajplot). With this experience, I concluded my civil service duties. [\[Reference Letter\]](#)

**Fit4School**

Sept. 2019 - Mar. 2021

*Tutor*

Next to my studies, I worked at a fit4school learning center as a tutor in English, maths and physics.

**Day Centre & Kindergarden Bilten**

Sept. 2016 - Mar. 2017

*Carer - Civil Service*

Instead of serving in the Swiss military I decided to do *Civil Service* and focus on care & assistance. I concluded my first service at a day centre supporting the team in their daily tasks. [\[Reference Letter\]](#)

## Selected Projects

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### Research Project

meshcapade

*Title:* Understanding Human-Object Interactions in more Detail

*Advisors:* Prof. M. J. Black, Muhammed Kocabas, Zicong Fan

- Model human-object interactions in 3D using from monocular RGB
- Neural Rendering with 3D Gaussian Splatting
- Extend the below problem formulation to the more general case of human-object interactions

### Master Thesis [\[Report\]](#), 5.75/6

AIT Lab

*Title:* HOLD-GS: Reconstructing Hand-Object Interactions in 3D

D-INFK ETHZ

from Monocular Video using Gaussian Splatting

*Supervision:* Prof. O. Hilliges, Zicong Fan, Muhammed Kocabas (meshcapade) **Mar. 2024 - Sep. 2024**

- Model hand-object interactions in 3D using from monocular RGB
- Extending HOLD with 3D Gaussian Splatting for real-time rendering

### Semester Thesis [\[Github, Report\]](#) 6/6

Computer Vision &amp; Geometry Group

*Title:* Adaptive Visual Pose Estimation for Multi-Robot Registration

D-INFK ETHZ

*Supervision:* Prof. M. Pollefeys, Dr. Hermann Blum, Francesco Milano (ASL) **Oct. 2023 - Feb. 2024**

- Deep Learning in Computer Vision
- Continual Learning & Adaptive Geometry for Pose Estimation

### 3D Vision Project [\[Github, Report\]](#) 5.75/6

Computer Vision &amp; Geometry Group

*Title:* Monocular Pose Estimation for Human-Robot Co-Localization

D-INFK ETHZ

*Supervision:* Dr. Hermann Blum, Weicai Ye (ZJU)

**Feb. 2023 - Jun. 2023**

- Creating a synthetic data pipeline using BlenderProc2
- Adapting OnePose++ to train a SPOT pose estimation model

### Digital Humans Project [\[Github, Report\]](#) 5.75/6

Computer Vision &amp; Learning Group

*Title:* Combining 3D Scene Reconstruction & Human Motion Capture

D-INFK ETHZ

*Supervision:* Dr. Sergey Prokudin

**Feb. 2023 - Jun. 2023**

- Human Motion Capture using EasyMocap; SMPL
- Novel view synthesis from RGB videos
- 3D Scene Reconstruction using Nerfstudio

## Skills

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**Proficient** PyTorch, Python, Bash, Git, OpenCV, NumPy, SciPy,  $\text{\LaTeX}$

**Moderate** Blender, Docker, Adobe CS, DaVinci Resolve

**Prior Experience** C++, MATLAB, RUST, TypeScript, Julia, HTML/CSS, Angular, REST, SQL

**Languages** Swiss-German (Native), English (C2), French (Read/Write)

Thank you for your time.