

# Lucas Steinmann

Technology enthusiast with proven and field-tested expertise in AI and machine learning. I am very interested in taking on new tasks and exciting innovation projects.

## Contact:

lucas [at] steinm.net

## PROFESSIONAL EXPERIENCE

### preML GmbH, Lahr/Schwarzwald — *Technical Director*

SEPTEMBER 2020 – TODAY

Technical director and co-founder.

preML develops automated, visual quality systems based on classic and AI-based image processing. Among other things, systems for the inspection of tunnel segments, concrete blocks and aluminum parts for the automotive industry have been developed.

Tasks:

- Strategic orientation of the company
- Management of internal and customer-specific software development
- Customer support for requirements development
- Technical feasibility check of requirements
- Conception of optical systems
- Development of new, AI-based methods for detecting defects on components.
- Personnel responsibility for 2 part-time employees in the technical department

### Fraunhofer IOSB, Karlsruhe — *Assistant researcher*

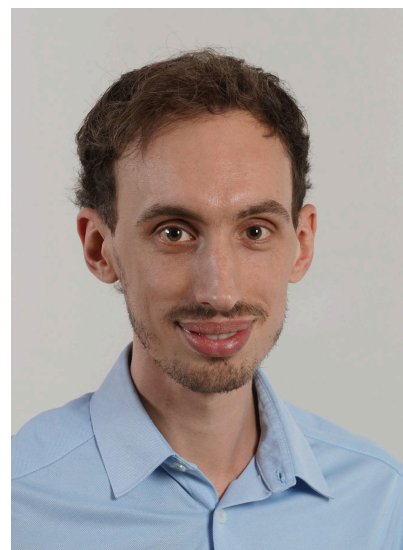
NOVEMBER 2017 – JANUARY 2020

Part of the video analysis group (VID).

Main focus: Detection of vehicles in UAV and satellite images, as well as people in images from the drone perspective.

Investigation of the suitability of various deep learning-based detection methods and optimization to the characteristics of the respective data.

Publication of the results at conferences.



## SKILLS AND ABILITIES

Expert

Python, Linux, Git, Docker, OpenCV, PyTorch, NVIDIA Jetson

Advanced

MS Office, Bash, Server Administration, LaTeX

A little dusty<sup>1</sup>

C#, C++, C, Java

## AWARDS

FirstPlace, Embedded Real-Time Inference Challenge in UAVision Workshop, CVPR 2019

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<sup>1</sup> “a little dusty” means I didn't use this language in my last job, but I used it extensively in a previous one, and I'm in the process of refreshing my knowledge.

**Synolus GbR, Lahr/Schwarzwald — Software developer, part-time**

APRIL 2016–MAY 2017

Development of C#/Xamarin and C++ applications.

**Karlsruhe Institute for Technologie (KIT), Karlsruhe — Assistant researcher**

JANUARY 2017–JUNE 2017

At the Chair of Programming Paradigms.

Development of a Java application for code analysis.

**Karlsruhe Institute for Technologie (KIT), Karlsruhe — Assistant researcher**

OCTOBER 2014–JUNE 2016

Study center for the visually impaired.

CAD processing of components for 3D printing, as well as operation and maintenance of 3D printers.

**LANGUAGES**

German – Native

English – business fluent and academic writing

**EDUCATION**

**Karlsruhe Institute for Technologie (KIT), Karlsruhe — Master of Science, Informatik (∅ 1.5)**

SEPTEMBER 2017 – AUGUST 2020

Focus: Cognitive Systems and Robotics

Thesis at Fraunhofer IOSB: “Multi-Object-Detection and Tracking using Deep Convolution Networks”

**Karlsruhe Institute for Technologie (KIT), Karlsruhe — Bachelor of Science, Informatik (∅ 2.1)**

SEPTEMBER 2014 – AUGUST 2020

Thesis at Fraunhofer IOSB: “Comparison of Deep Learning based Detection Frameworks for Vehicle Detection in Aerial Imagery”

**Max-Planck-Gymnasium, Lahr/Schwarzwald (∅ 1.9)**

SEPTEMBER 2006 – MAY 2014

**PUBLICATIONS**

**Multi-camera-based tunnel segment detection and inspection using Artificial Intelligence — 2023**

Authors: Boerzel, A., Werres, F., Steinmann, L., Fehrenbach, J., & Fehrenbach, D.

In Expanding Underground-Knowledge and Passion to Make a Positive Impact on the World (pp. 2601–2608). CRC Press

**Convolution neural network-based machine learning approach for visual inspection of concrete structures — 2021**

Authors: Patel R., Steinmann L., Fehrenbach J., Fehrenbach D. & Dehn F., EUROSTRUCT 2021

**Fast and Lightweight Person Detector for Unmanned Aerial Vehicles — 2019**

Authors: Lucas Steinmann, Lars Sommer, Arne Schumann, Jürgen Beyerer, EUSIPCO 2021

**Systematic evaluation of deep learning based detection frameworks for aerial imagery — 2018**

Authors: Lars Sommer, Lucas Steinmann, Arne Schumann, and Jürgen Beyerer, EUSIPCO 2021

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