

# Philipp Ahrendt

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Software Engineer with experience in machine learning, computer vision, and distributed systems.  
Interested in the research and development of machine learning algorithms that solve real-world challenges.

## Professional Experience

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SEMRON

SOFTWARE ENGINEER

Dresden, Germany

08/2025 - Present

- Designed and built an open-source framework enabling geographically distributed machine learning across heterogeneous hardware based on DiLoCo and Swarm
- Implemented orchestration, communication, and scheduling components to support efficient cross-region training and resource utilization

Flox Robotics

RESEARCH ENGINEER INTERN

Stockholm, Sweden

01/2024 - 10/2024

- Developed altitude-adaptive object detection for UAV imagery using multi-modal sensor inputs (RGB + altitude)
- Improved average precision of small object detection by 2% while reducing number of parameters by 75%

SoundHound

SOFTWARE ENGINEER

Berlin, Germany

04/2022 - 08/2022

- Extended voice assistance API to support a new German-language domain, enhancing natural language understanding and generation capabilities
- Increased testing efficiency by enhancing a Python-based tool using pair-programming

Ayrendoo

COFOUNDER AND LEAD DEVELOPER

Berlin, Germany

06/2019 - 10/2020

- Developed a Swift-based social meetup app with map, group chat, and Firebase-backed data infrastructure

ETAS K.K. - Subsidiary of Robert Bosch GmbH

CYBERSECURITY ENGINEER INTERN

Yokohama, Japan

08/2019 - 01/2020

- Developed a Python-based interface enabling proprietary C-based hardware (CAN-bus) to integrate seamlessly with the open-source python-can tool
- Created a testing suite to streamline the evolution of a penetration-testing tool, ensuring functionality after each code modification

Artiminds Robotics GmbH

JUNIOR SOFTWARE ENGINEER

Karlsruhe, Germany

07/2017 - 05/2019

- Developed C++ features for company software, including an export function that generated a template graph of robot instructions in a customer-ready Word document
- Enhanced interface functionality and user-friendliness by refining existing features and implementing effective workarounds for critical legacy code
- Integrated a camera sensor for real-time image feed from a KUKA robot into company software using KUKA robot language without any prior experience

## Education

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KTH Royal Institute of Technology/ Polytech Nice Sophia

MSC: INTELLIGENT AUTONOMOUS SYSTEMS (DOUBLE DEGREE)

Stockholm, Sweden/ Nice,

France

2022 - 2024

- Grade: A, Thesis: Investigating Altitude-Adaptive Methods for Enhancing Small Object Detection on UAVs

Karlsruhe Institute Of Technology

BSC: ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

Karlsruhe, Germany

2016 - 2021

- Thesis: Detection and Classification of Higher Cognitive Functions using an EEG-based Brain-Computer Interface

## Skills & Interests

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Skills	C++   Python   Git   Machine Learning   ROS   Computer Vision   Linux   PyTorch   TensorFlow   Control
Languages	Fluent in German, English, French
Course work	3D machine vision   Advanced Deep Learning   Applied Estimation   Reinforcement Learning   MPC
Interests	Intersection of Robotics and AI   Tennis   Effective Altruism   Learning new skills