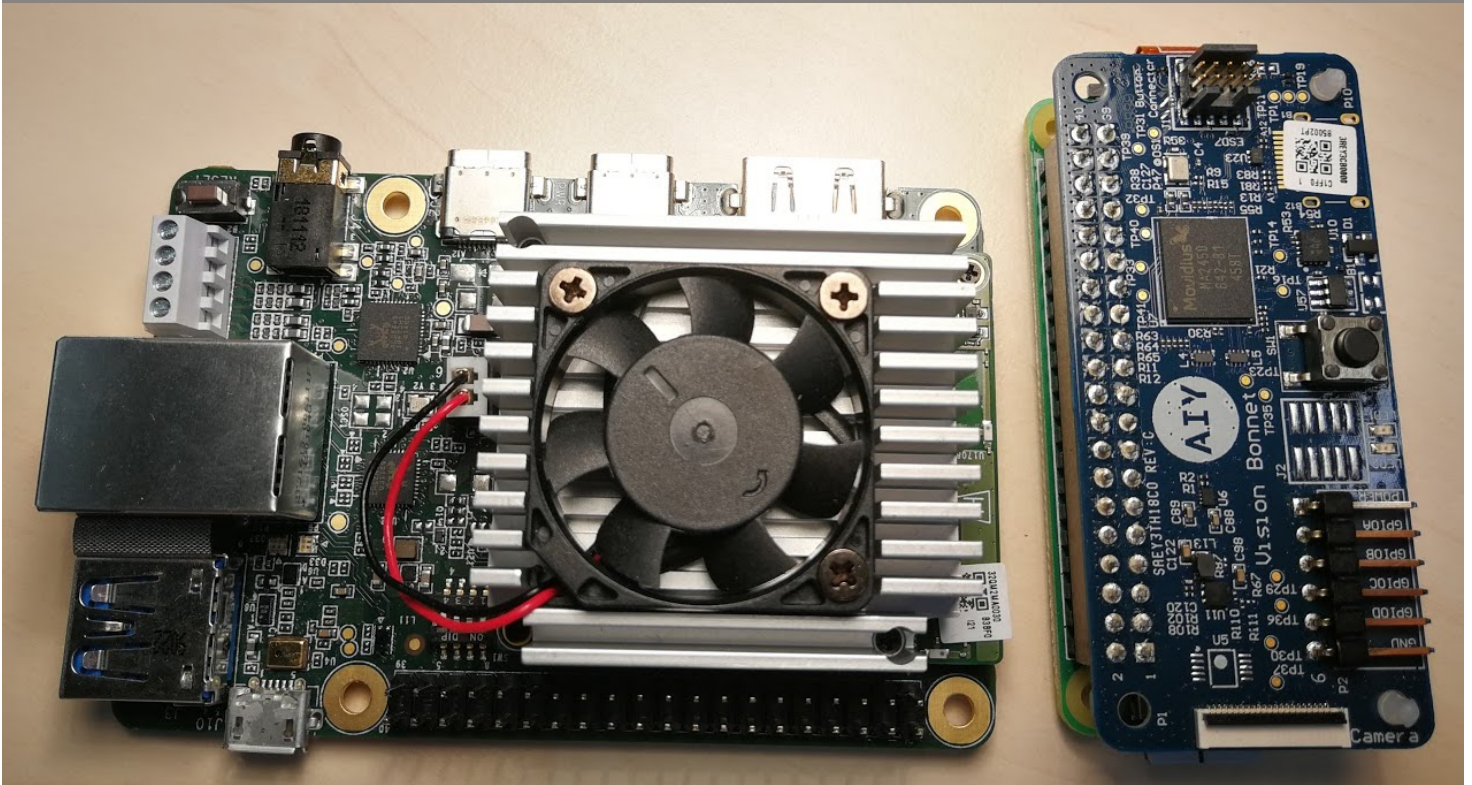


# Embedded Machine Learning

## Wahlpflichtkurs WiSe 2020/21



Modern machine learning (ML) methods are increasingly influencing the development of embedded systems. ML frameworks now run on single board computers. This means that ML methods can be used directly on low-power devices without having to be connected to the Internet or a cloud. Some interesting new deep learning accelerators for embedded systems have hit the market just recently: On the left, the Google Coral Edge Tensor Processing Unit (TPU) is shown on a developer board, on the right, an Intel Movidius Myriad 2 Vision Processing Unit (VPU) on a Raspberry Pi Zero. NVIDIA is also updating its portfolio regularly. These chips are specially designed for ML inference applications for embedded systems.

This course will give you an introduction to deep learning for image processing and the tools which are required to get ML running on an embedded system. A Raspberry Pi 4 with google coral TPU will serve as a platform for experiments. Prior ML knowledge is welcome but not required. An individual project will deepen your knowledge and experience with embedded machine learning.

**Maximale Teilnehmerzahl:** 16

**Prüfungsleistung:** Hausarbeit über individuelles Projekt

**Kurs-Sprache:** Englisch

**Studiengänge:** Alle Bachelorstudiengänge der Fakultät Technik und Informatik

**Organisation:** 2 SWS Vorlesung, 2 SWS Praktikum, 6 CP

**Dozent:** Prof. Dr. Stephan Pareigis (Department Informatik)