MCUNet on RPi Pico

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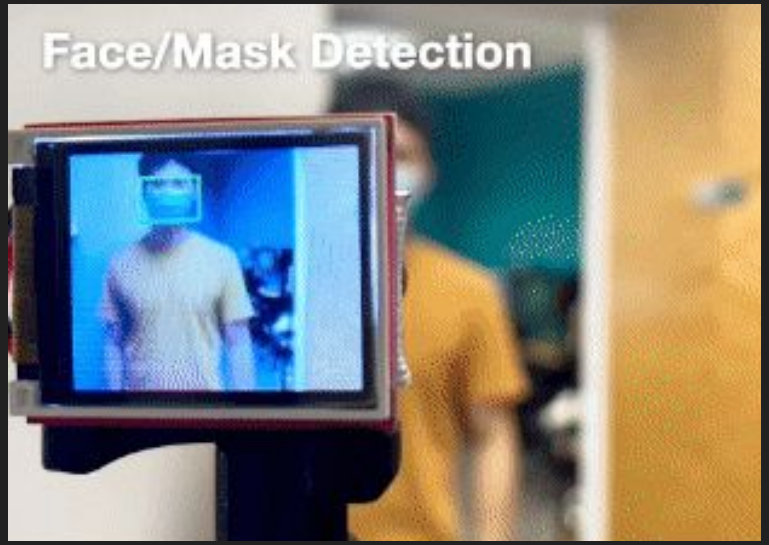
INTRODUCTION & MOTIVATION

ML @ the Edge

- Microcontrollers
- Power-efficiency
- Performance constraints

Raspberry Pi Pico

- Inexpensive
- High availability
- Power-efficient
- Extensive documentation



PROBLEM & OBJECTIVE

Problem

- MCUNet developed for STM32 boards
  - Cortex M7 Processor
- Display, camera, board drivers intrinsic to STM32

Objective

- How do we port to RPi Pico?

WHAT HAVE OTHERS DONE?

Deriech Cummings

- MCUNet working on original STM32 boards
- Getting acquainted with the MCUNet codebase
- Which libraries (and their versions) can or cannot port? (e.g. CMSIS)

APPROACH

Modular Programming

- Clearly partition general and targeted code
- Clearly comment and document non-general code

Analysis

- Which libraries may need changes for the ARM M0 core?

PROGRESS

Programming Environment

- Fresh Linux install
  - Raspberry Pi OS
- RPi Pico SDK
  - Is RPi Pico working?

Codebase

- Camera, Display
- HAL (Hardware Abstraction Layer)