

STM32F767 microcontroller

Hardware specific

System initialization

- System clock
- Peripherals
- I/D caches
- Flash prefetch

Utility functions

- Various peripheral drivers
- SysTick timer
- DWT timer

Timing driver

UART driver

SPI driver

I2C driver

Application specific

ML inference box

- Preprocess images
- Invokes inferences
- Predicts class probability

Tensorflow Lite for Microcontrollers

Model Interpreter

Stored model

Error reporter

Result reporter

Simple shell

- Communication interface between STM32F767 and NRF52840

Printf library

- Memory constrained implementation for embedded devices

FLIR Lepton driver

- Initialization
- Camera control over TWI
- Image data receive over VoSPI

nRF52840 DK

FLIR Lepton 2.5 thermal camera

