Workshop Notes

Preparation / Prerequisits

- Download …
- Install …
- Print …

Introduction

- The work of the EOLab Team → Current state of development
- Image Classification
- Object detection
- Mini drones with OD

Hands On

- Connect SNAP to the server in Nvidia Jetson
- Image classification game
- Object Detection ??

Reflection

Main Achievements (internal discussion)

SNAP! and Mini-Drone (Harley, 3 mins, live, with Alonzo pilot)

- Tello SNAP Backend (Javascript backend, communication software interface, Wifi, client, binding to IP address), URL, eolab.de github
  - One drone has a default IP, it is in “station” mode (the drone is AP, AP mode), 192.168.10.1
  - Tello AP mode (client to Wifi), necessary for more than one drone in network and/or interaction with Jetson
- Tello SNAP! category (collection of SNAP! Javascript blocks), websocket interaction with the interface talking to the drone
- https://wiki.eolab.de/doku.php?id=drones:mini_drones:snap_tello

Object Detection: Follow an Object with Drone (Ilgar, 3 mins)

- Based on Harley's presentation on Tello SNAP! interaction
- New aspect: Object detection, Jetson
- Challenges
    - Video stream from Tello drone to SNAP! (25 fps)
    - Video stream from SNAP! to Jetson (extacting stage in base64 format, send message, wait response, sequential, 7 fps)
    - Receive response from Jetson to SNAP! (bounding box, class label, coordinate transformation to the stage)
- Frame rate incl. analysis is 7 fps
- Problem (not serious): Realtime delay (latency) within the Tello drone video stream!
- TODO: Short video!