

DATI, AI E ROBOTICA @POLITO

RICERCA, TRASFERIMENTO TECNOLOGICO E SUPPORTO ALLE AZIENDE SUI TEMI FONDAMENTALI DEI BIG DATA, INTELLIGENZA ARTIFICIALE, ROBOTICA E RIVOLUZIONE DIGITALE

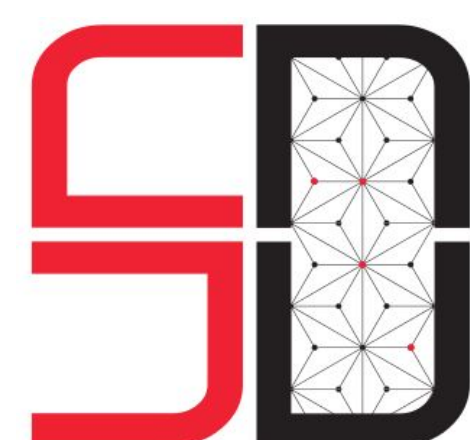


AI@PIC4SER

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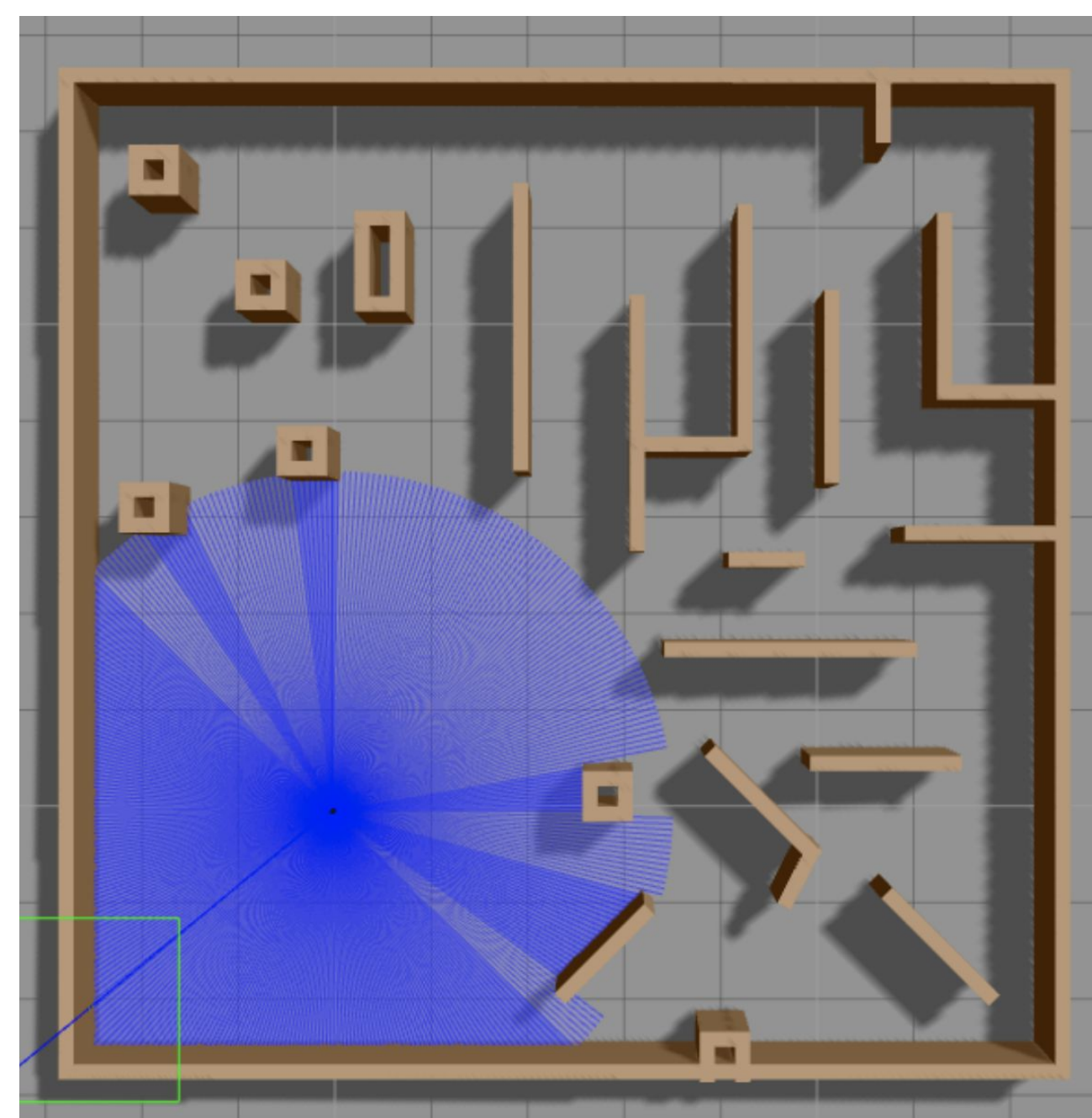


Politecnico di Torino



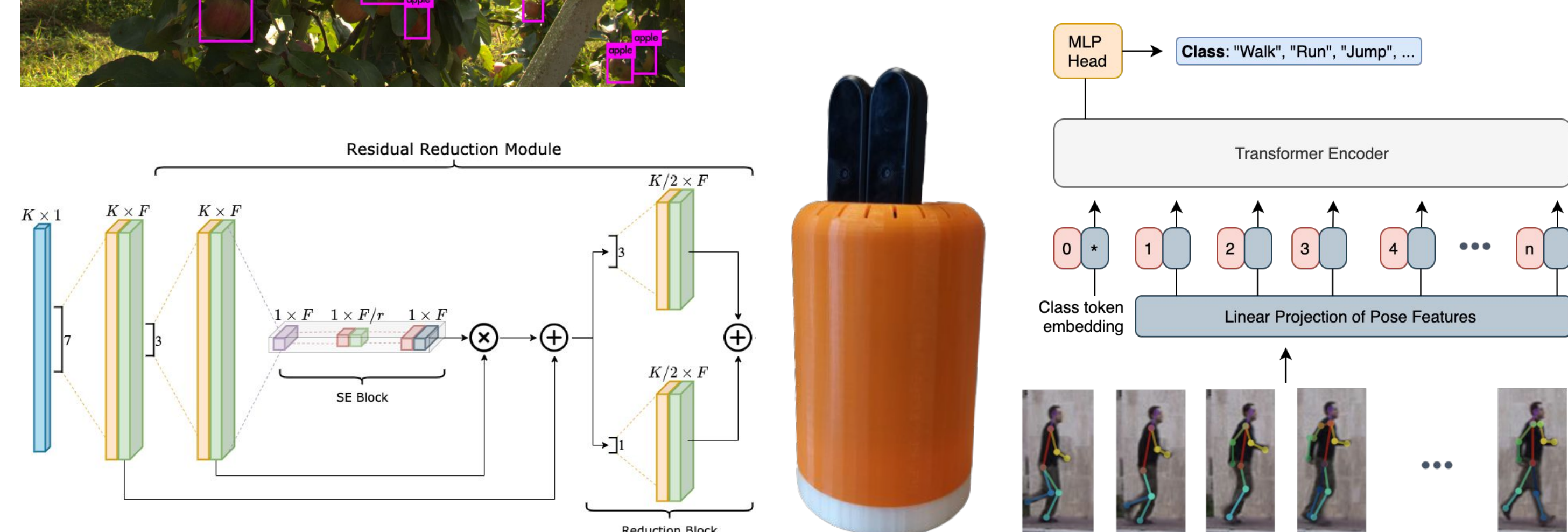
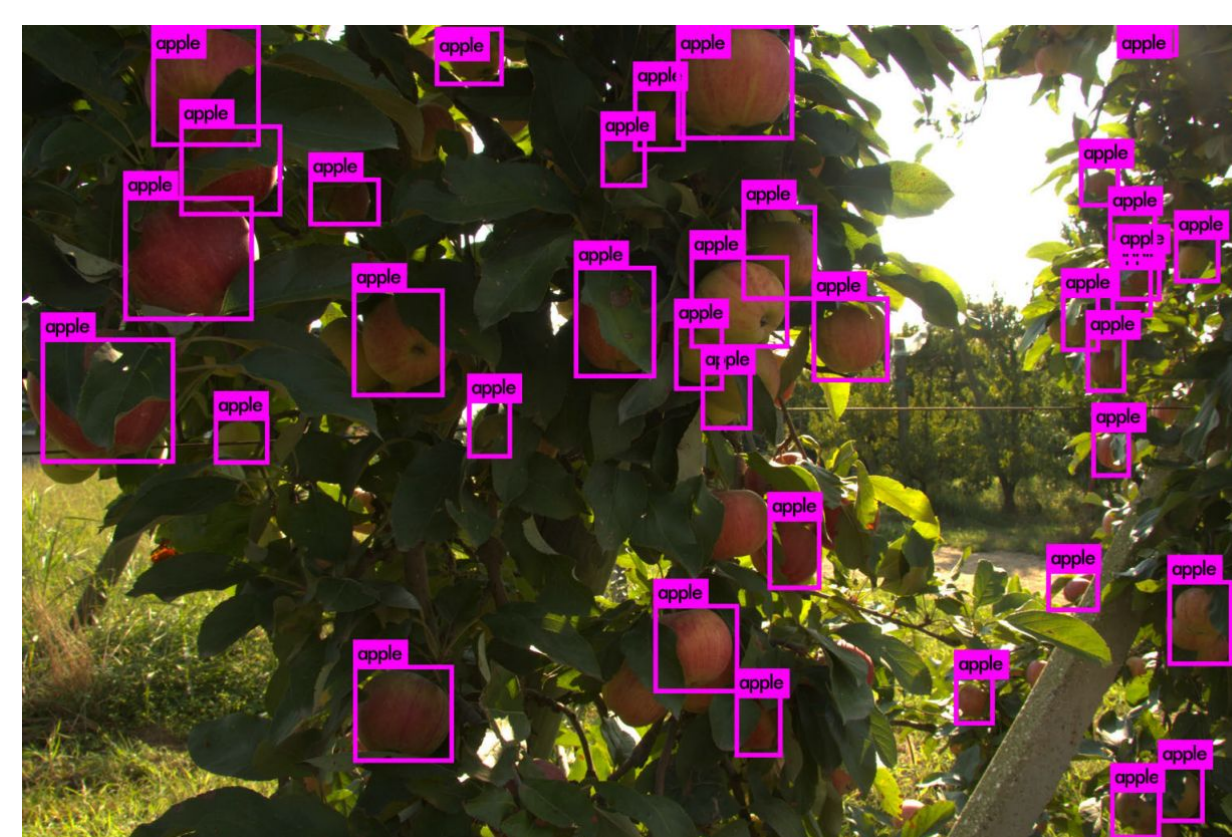
NAVIGATION

- Local Navigation with **Deep Reinforcement Learning** based on lidar and depth cameras
- DeepWay: a **global path planner for row crop navigation** from satellite imagery
- Image semantic segmentation** for indoor robot local path planning
- Person following** based on pose estimation and object detection from RGB-D data



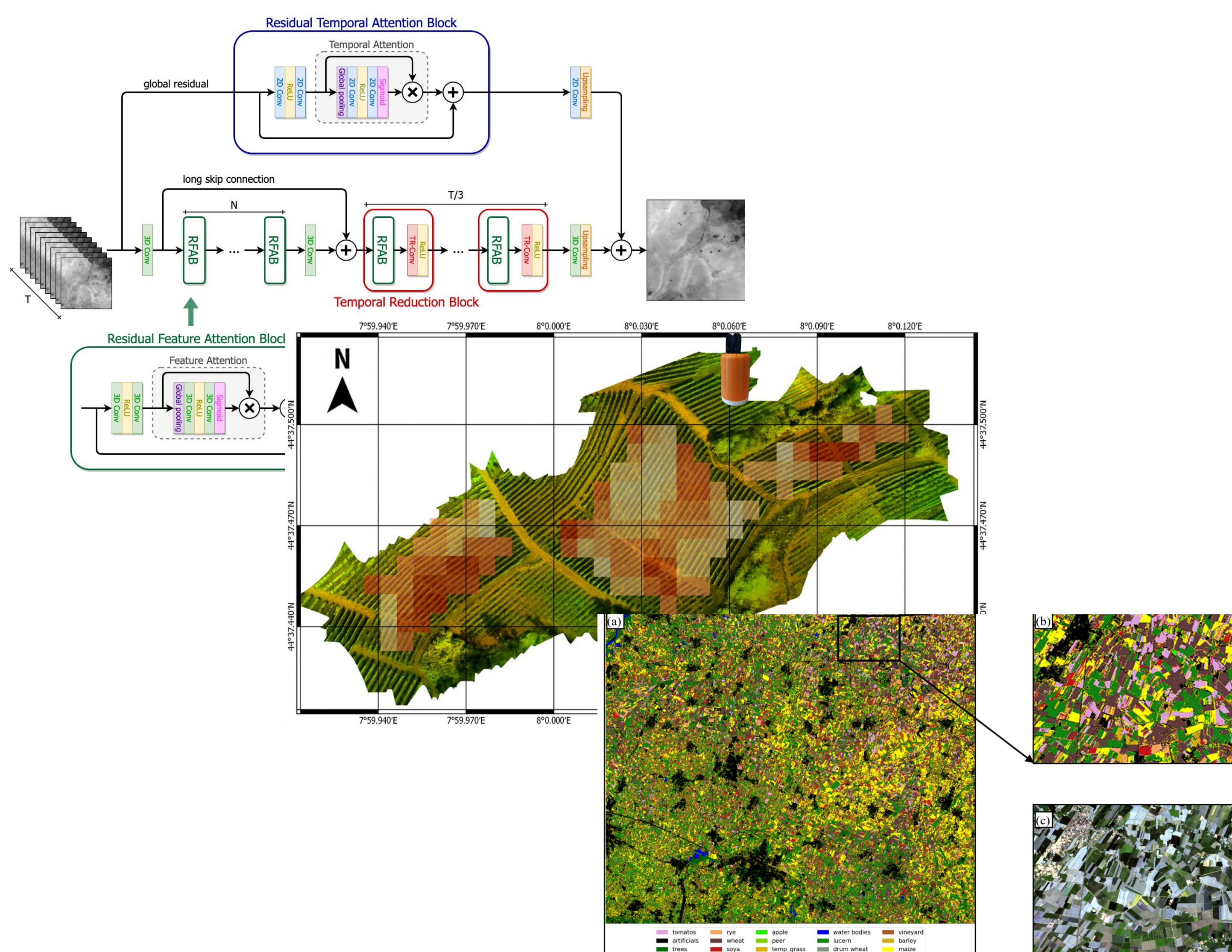
MODEL OPTIMIZATION AND EDGE-AI

- Human Action Recognition** with pose estimation for indoor assistant robot
- Apple Detection and Counting** for smart agriculture
- Ultra-Wideband **Positioning Error Correction**
- Real-time **Crop Segmentation**
- Face Identification** for access control
- Voice Assistant** for human-robot interaction



REMOTE SENSING

- Land cover and crops classification** with Sentinel II data
- Multi-image super-resolution** of multi-temporal remote sensing data
- Refinement of satellite-driven **vegetation index** with UAV acquisition
- Domain generalization** for land cover classification



GEO-AI

- Deep semantic segmentation of **cultural built heritage point clouds** for scan-to-BIM processes
- SEI project: **spectral evidence of ice**. Use of UAV data for pre-flight inspection of aircraft
- Service robotics and ML with close-range remote sensing data for **precision agriculture**
- Towards a FOSS automatic classification of defects for **bridges structural health monitoring**
- Classification of **riparian plant species**

