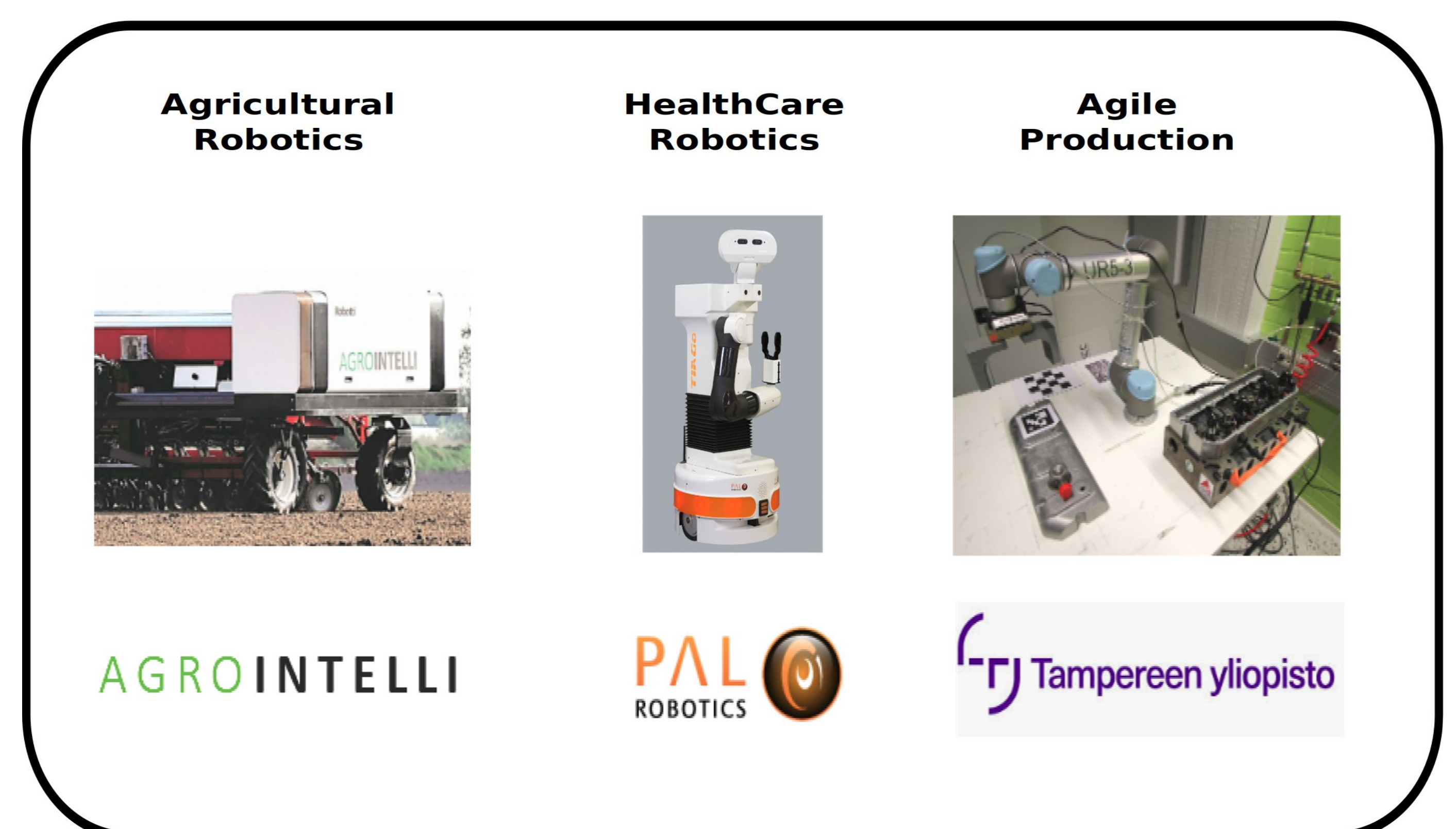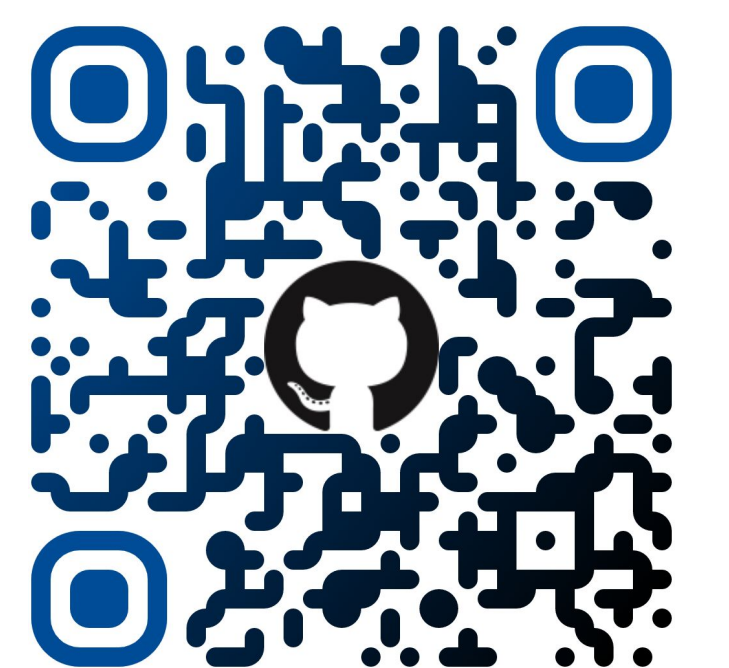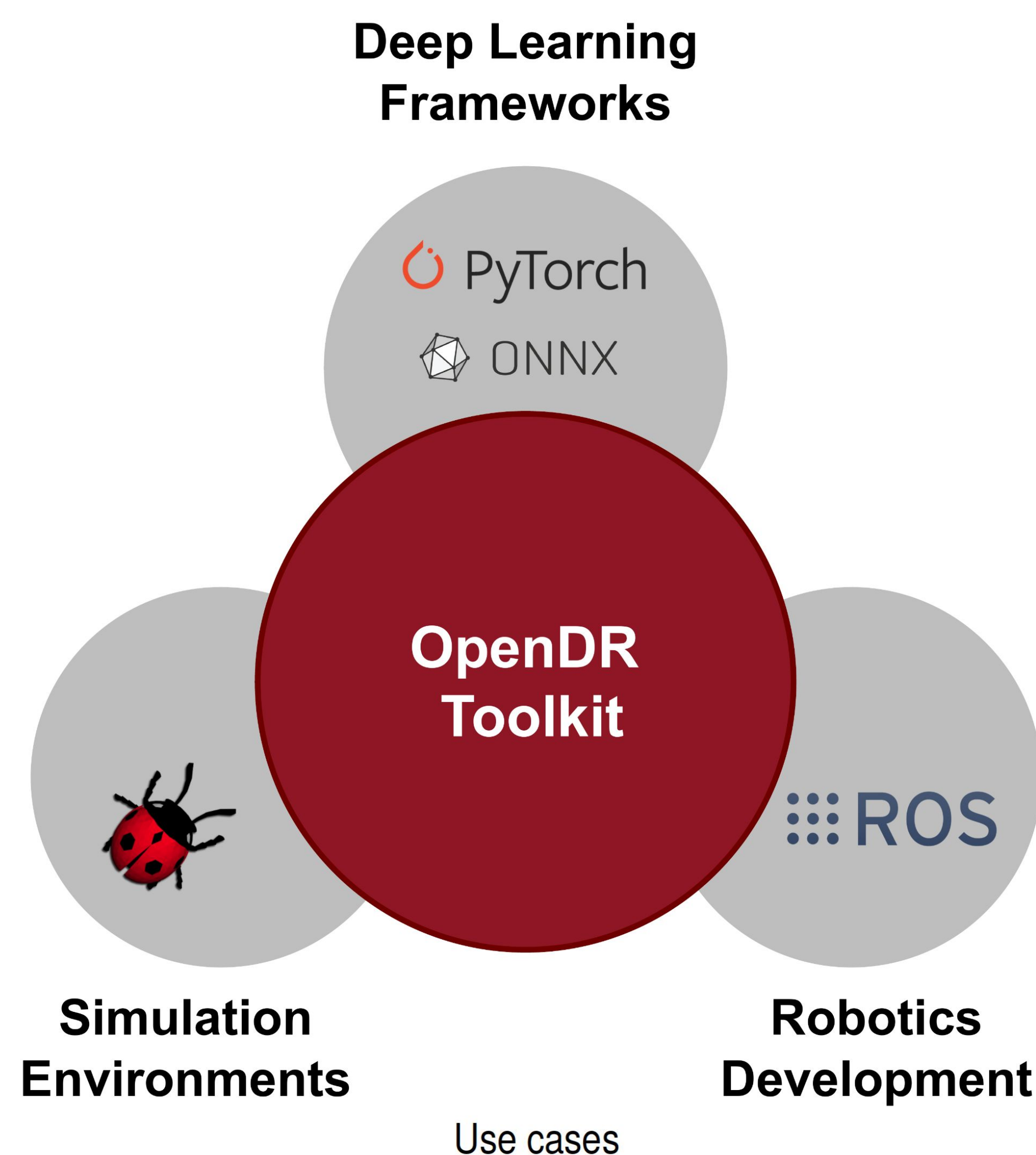**ODeepRobotics** *open*

Open Deep Learning toolkit for Robotics

OpenDR aims to develop a **modular**, **open** and **non-proprietary toolkit** for **core robotic functionalities** by harnessing **deep learning** to provide **advanced perception and cognition capabilities**, meeting in this way the general requirements of robotics applications in the applications areas of **healthcare**, **agri-food**, and **agile production**.

Toolkit Version 2.1 features

- Activity Recognition
- Face Recognition
- Facial Expression Recognition
- Heart Anomaly Detection
- Human Pose Estimation
- Hand Gesture Recognition
- 2D Object Detection and Tracking
- 3D Object Detection and Tracking
- Semantic and Panoptic Segmentation
- Action Recognition
- Full Map Posterior SLAM

- Mobile Manipulation
- Single Demonstration Grasping
- Advanced Simulation and Data Generation Capabilities
- Synthetic Facial Image Generation
- Human Model Data Generation
- Hyperparameter Tuning support

- ROS/RS2 API and ROS/ROS2 nodes for all tools
- C API for selected tools
- Support for ONNX standard
- Upgraded to CUDA 11.2
- Modular package installation

Deep Learning Frameworks

PyTorch
ONNX

OpenDR Toolkit

ROS

Simulation Environments

Robotics Development

Use cases

Agricultural Robotics

HealthCare Robotics

Agile Production

AGROINTELLI

PAL ROBOTICS

Tampereen yliopisto

GitHub https://github.com/opendr-eu/opendr

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Tampere University

AARHUS UNIVERSITY

TUDelft Delft University of Technology

UNI FREIBURG

CYBERBOTICS robot simulation

PAL ROBOTICS

AGROINTELLI

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