

StreamingAI

Federated Embedded AI for the digital transformation of Austrian Industries.



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MOTIVATION & GOALS

Streaming AI aims to drive low TRL, foundational research to develop AI for industrial applications. In contrast to conventional pre-trained, holistic, and resource-intensive AI,

- i. streaming machine learning methods
- ii. on-device machine learning methods are to be introduced,

thereby reducing dependence on mass training data and supporting ecological sustainability.

Project FactBox

Project Name StreamingAI
Project ID -
Duration 18 Months

Area 1
Area Perception

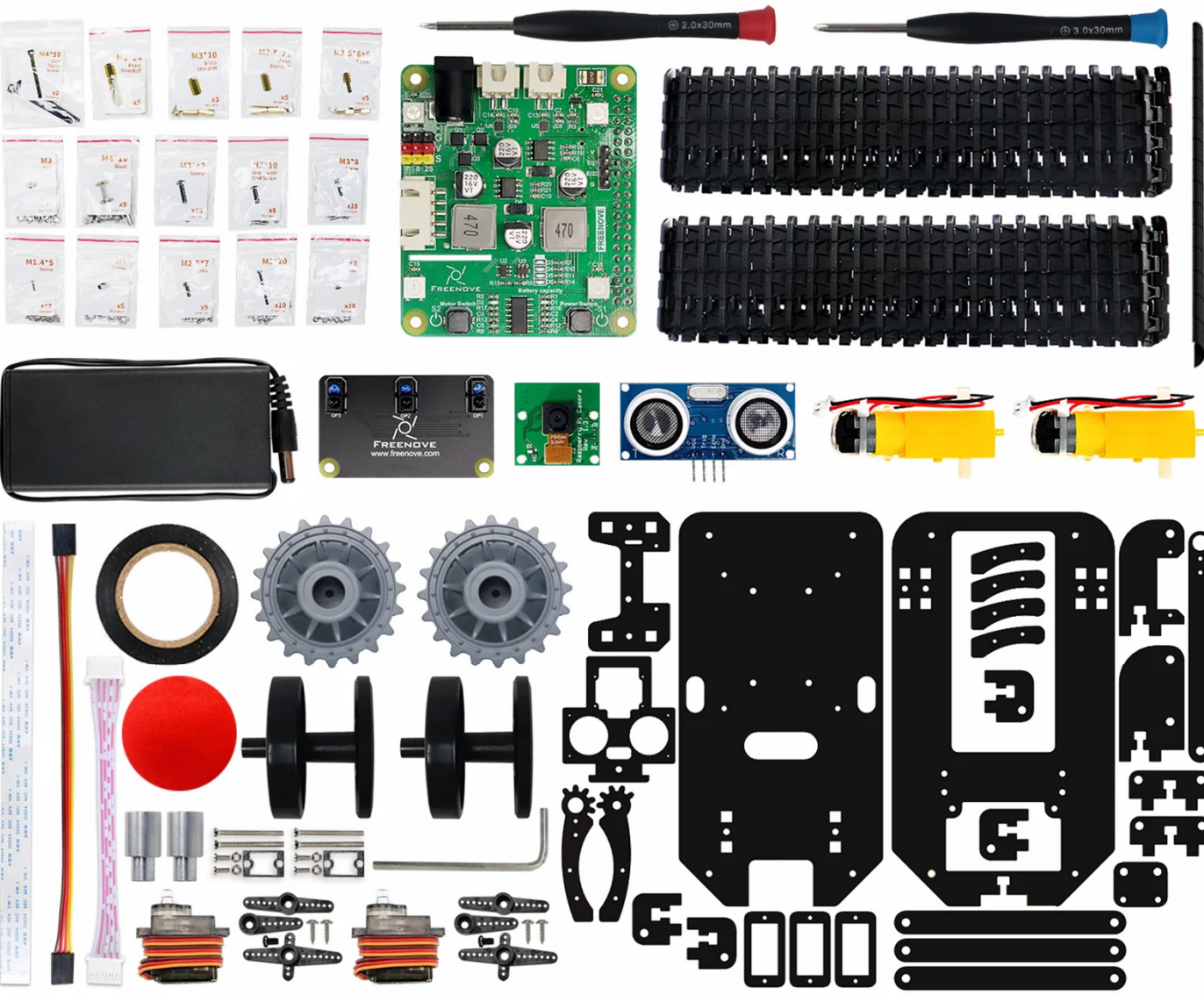
Project Lead
Dr. Bernhard Anzengruber-Tanase

MOBILE FEDERATION and REINFORCEMENT LEARNING

Development of a mobile, embedded AI testbed for research on federated reinforcement learning. Mobile entities are mimicked after construction or farming machinery, but systems are transferable to domains such as logistics.

PROTOTYPES and FRAMEWORKS

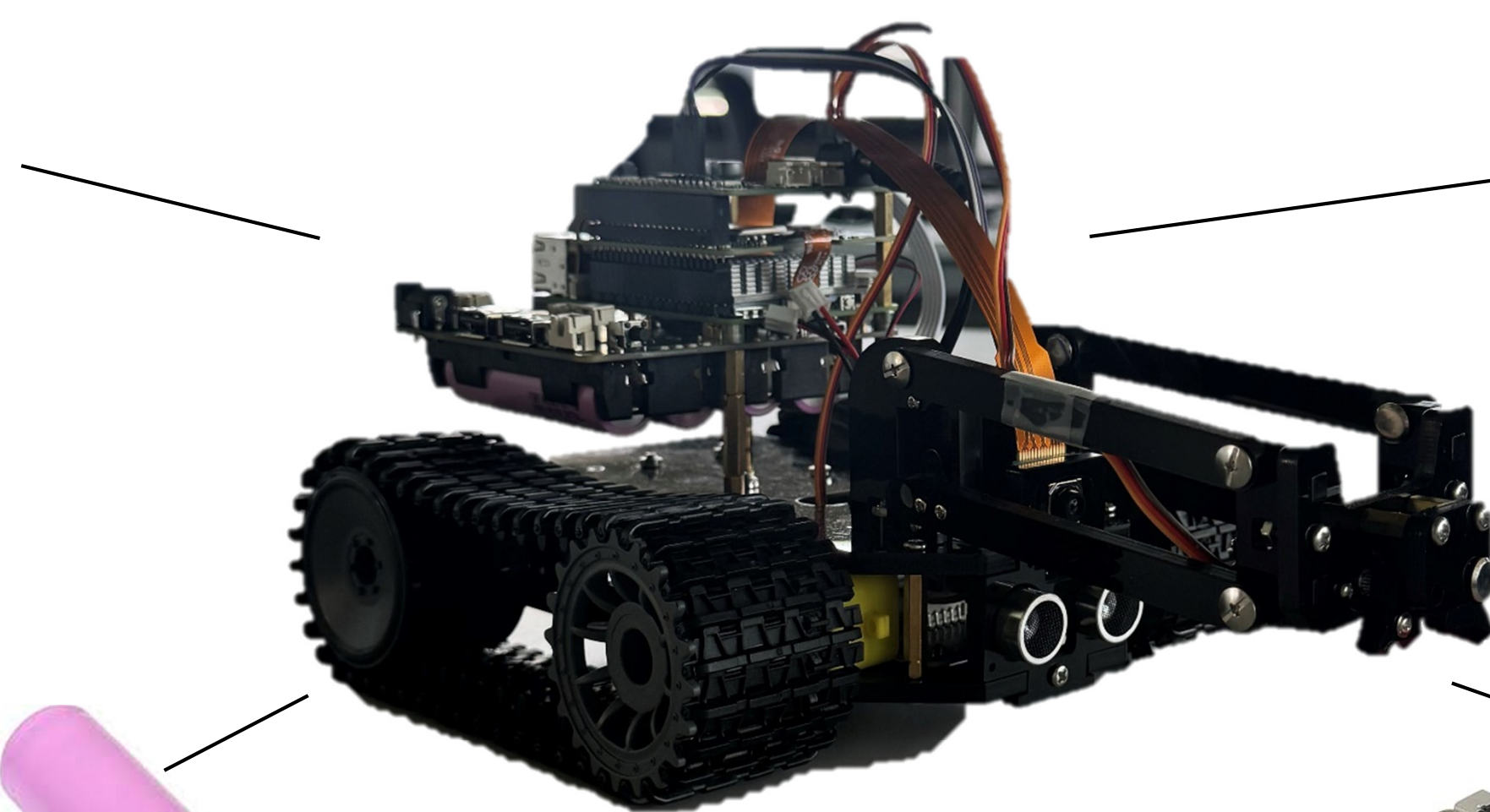
Parts and assembly of mobile, embedded AI units.



Freenove Robot Kit
Line following Sensor
Ultrasound distance measurement
Forward looking RGB Camera

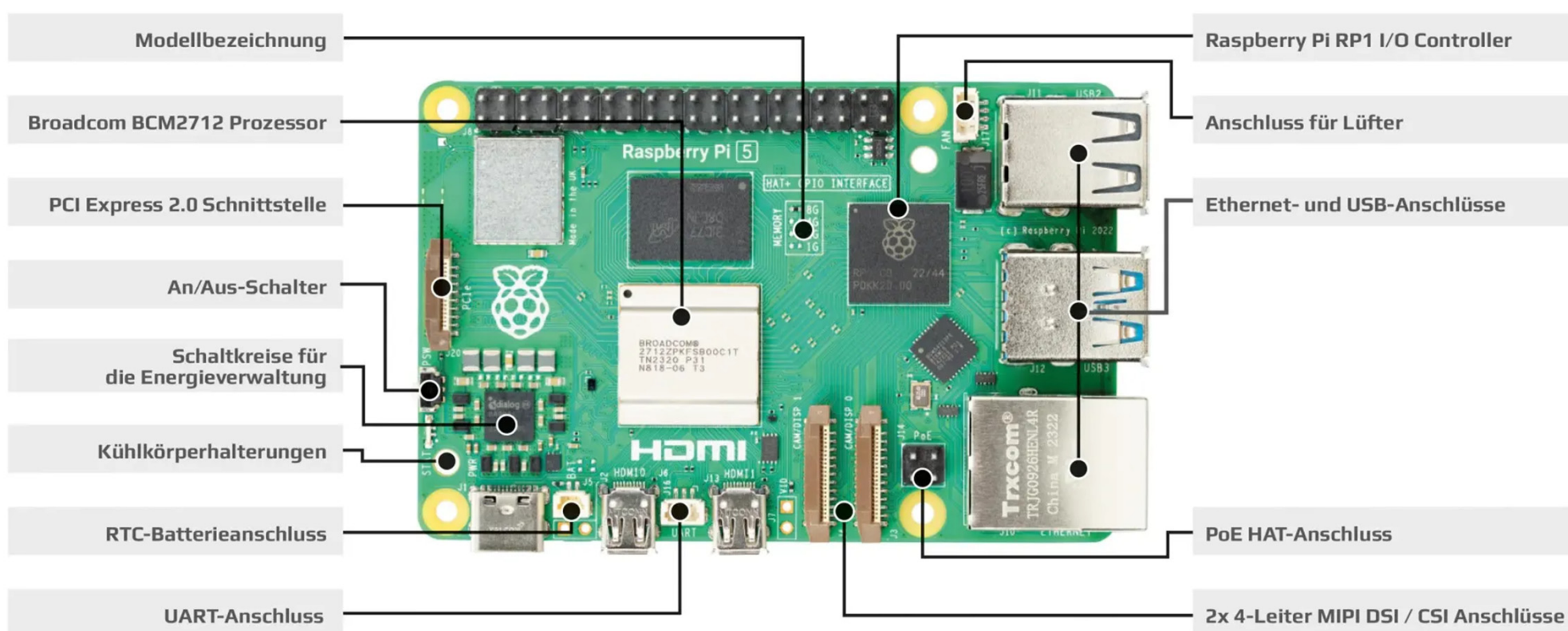


Z7-A Autonomous driving industry development board with AMD Zynq™ US+ MPSoC XCZU7EV



INR18650
Spezial Akku x6

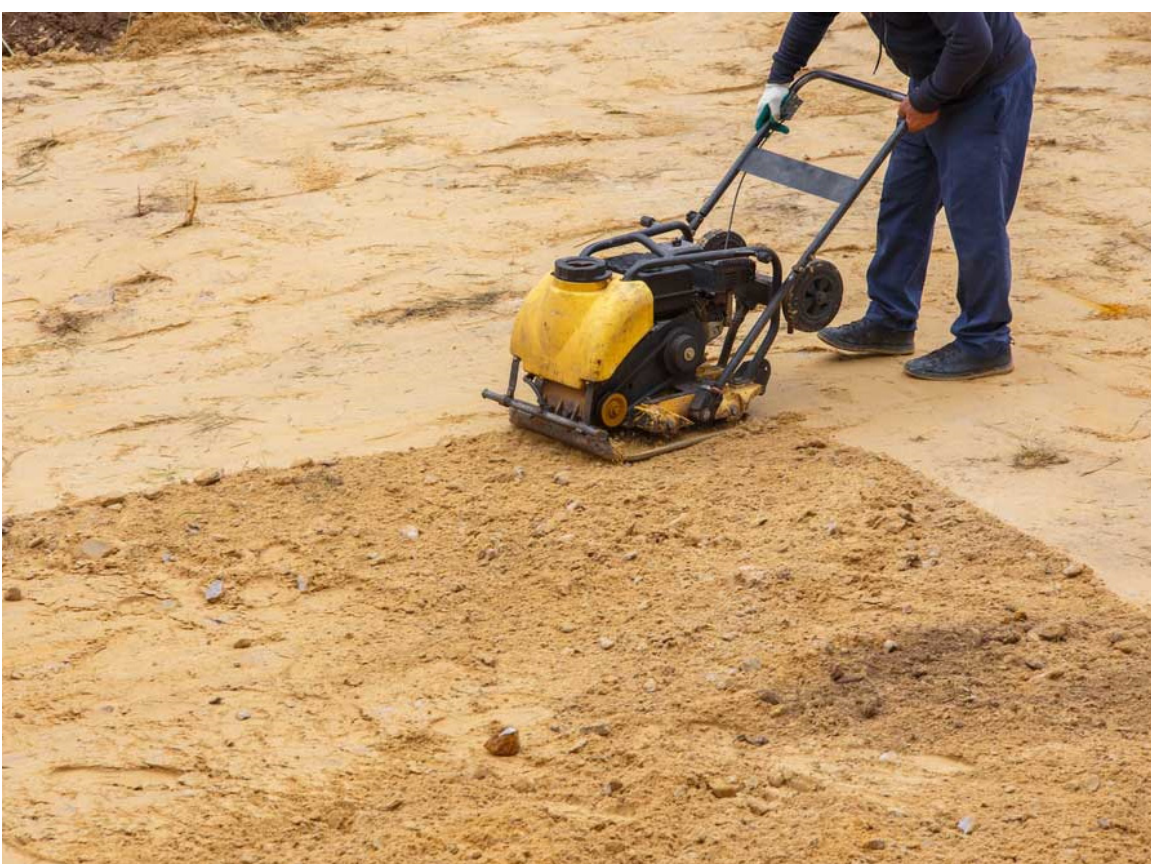
Geekworm X1202
4-Zellen-5-V USV



RaspberryPi 5 & AI HAT+
26 TOPS Hailo-8 TPU
2.4GHz Quad-Core 64-bit Arm Cortex-A76 CPU

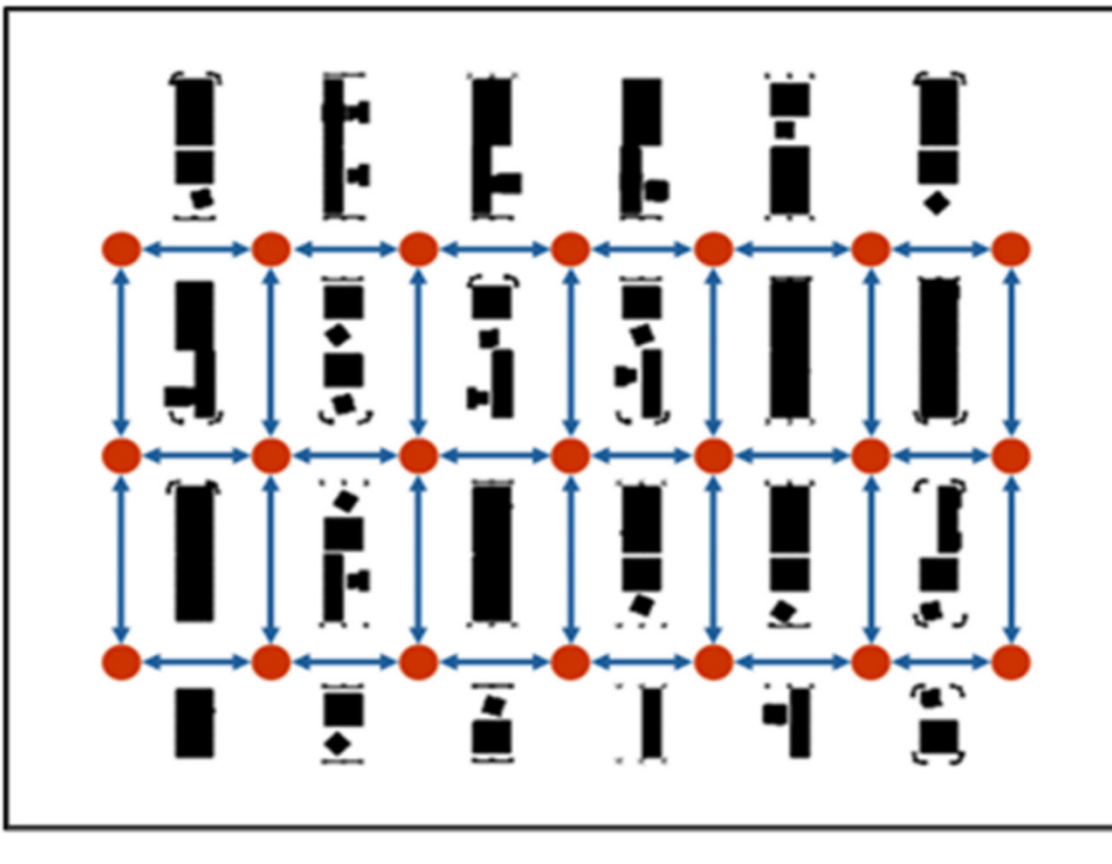
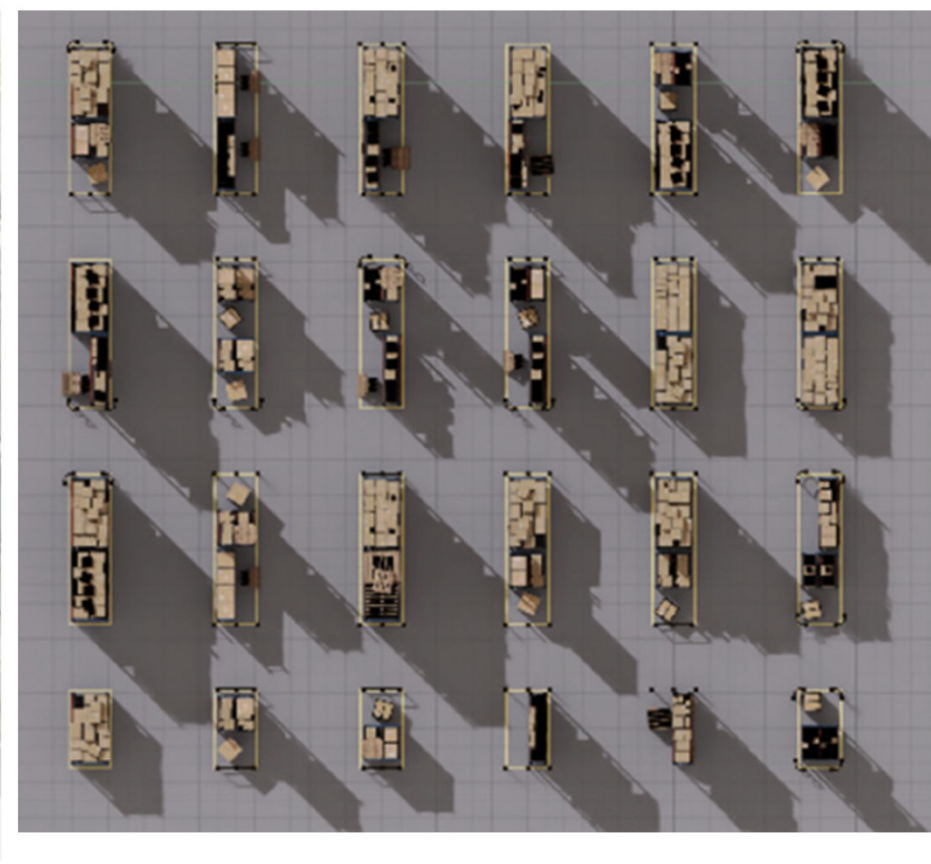
Use Cases I :: Construction and Farming

Federated RL to achieve or avoid Soil Compaction



Use Cases II :: Intra Logistics

Federated RL for path planning and congestion avoidance.



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