Intelligent robotic vacuum cleaner that can detect and avoid obstacles

**SCOPE**
- Machine vision for object recognition (obstacle detection), optimized cleaning, benchmarking of algorithm
- Detection and avoidance of wires, carpets, fallen objects, pedestal legs
- Person avoidance
- Data set generation
- Mapping, path planning and navigation
- Test environment setup inline with end product environment

**CHALLENGES**
- Detection performance improvement from 0.2 fps to 2.2 fps on Qualcomm board
- Meeting memory and performance requirements
- Data set collection, cleansing, and segregation
- Optimization of algorithm to run on an embedded system

**TOOLS AND TECHNOLOGIES**
- OpenCL
- TensorFlow

**AI engine Accuracy**
- 90%

**Market**
- Japan

**Delivery Model**
- ODC

**Product phase**
- In testing

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