smartR AI
Improving lives intelligently

Intelligent automation the smartR way
By smartR AI

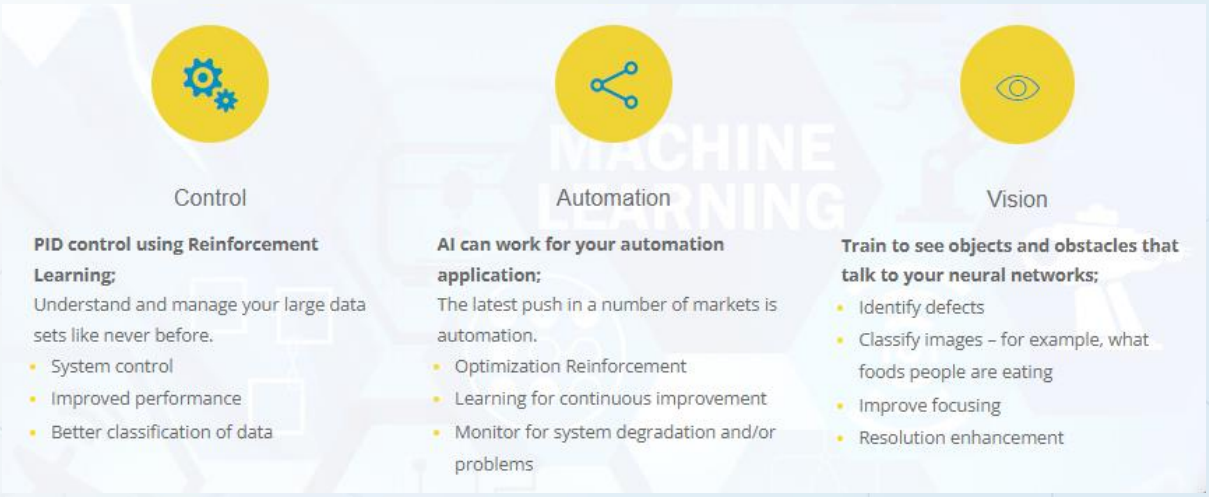
smartR AI specializes in AI applications that are used optimally to understand, interpret, predict, and respond to complex scenarios. As intelligence moves to the edge of the network smartR AI is all about doing things the smartest way. Using AI automation, control and vision smartR AI brings interoperability and interconnectivity to worldwide ecosystems and networks.

Why smartR AI automation?

Intelligent automation is the use of automation technologies—artificial intelligence (AI), business process management (BPM), and robotic automation—to simplify and scale enterprise decision-making.

AI automation is powerful because it enables organizations to harness the insights, flexibility, and processing power of AI technologies, and take advantage of the benefits of business process automation—increased speed, efficiency, time savings, and scalability.

A control problem is where you need to “turn knobs” to achieve the desired result. smartR AI implements Proportional, Integral, Derivative (PID) control processes using reinforcement learning.



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Control is just better using SERLE

SERLE, our proprietary engine, solves real-world problems, learns quickly, has a small footprint with numerous applications, and can be deployed at the edge of a network. The engine ensures optimal efficiency and performance, improves quality, has production-ready code, and reduces human error by using reinforcement learning to solve problems based on the rewards you give it. This makes it ideal to use in embedded devices.

SERLE solves complex control processes and issues, especially within automation, connecting and bringing the internet of things to life.

smartR AI automation use case – a real-life project

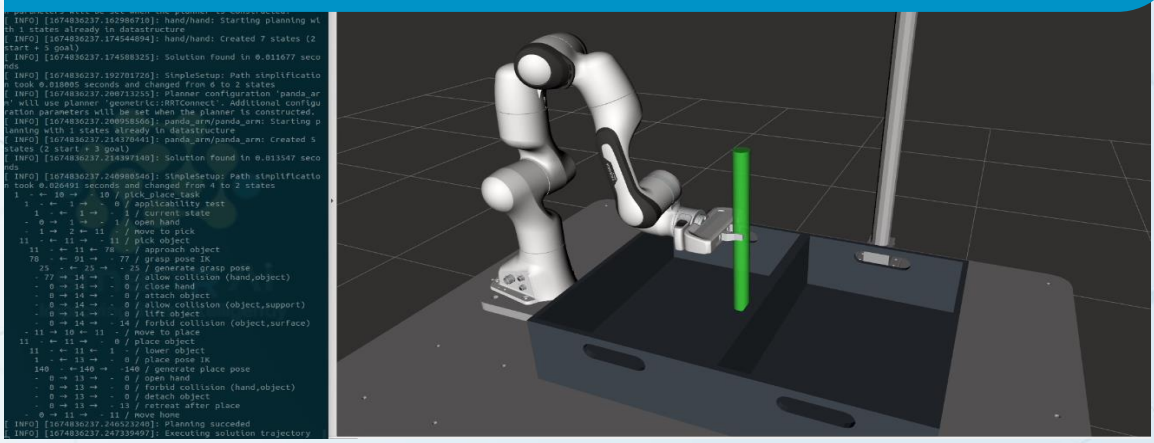
With our focus on consultancy, smartR AI's expertise lies in behavioral intelligence, interconnections to IoT and smart devices, online applications, and how AI can applications can be used optimally to understand, interpret, predict, and respond to complex scenarios.
Our proven methods guide you through the process of integrating machine learning and AI into your applications, and include:

- Feasibility study
- Architecture and design
- Robotics: control, HW and SW, ROS and R&D
- Proof-of-concept

The business perspective

Providing a Proof-of-Concept demonstration:

- Shortened the development time and saved big by leveraging open-source work using the Robot Operating System (ROS).
- Increased the potential market by making the product hardware-agnostic through native ROS compatibility.
- Accomplished complex goals that are only reachable through Deep Learning and Computer Vision.
- Got clients interested in their robotic products due to embedded AI features.



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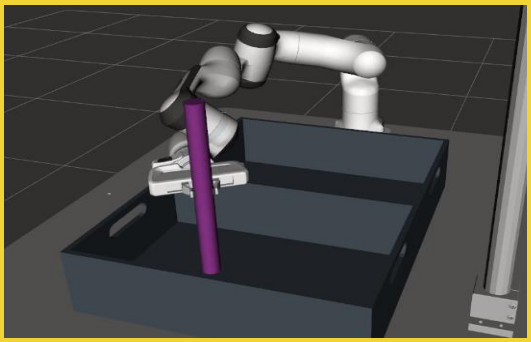
smartR AI actions

- Used ROS to work with multiple robotic arm models.
- Integrated a custom-made unique gripper into ROS
- Used Gazebo as a simulation engine
- Estimated the pose of different classes of items using RGBD cameras and computer vision (YOLO) for the food industry.
- Used MoveIt to plan collision-free efficient trajectories for high-frequency pick-and-place
- Developed bin-picking perception and 6D object pose estimation solutions for densely cluttered bins using IR and Depth cameras.

The technical perspective

- Designed and integrated the ROS stack with C++ and Python nodes for robotic object grasping and manipulation.
- Leveraged MoveIt and ROS-Industrial to validate a novel end-effector that handles delicate objects in record-breaking time. Watch the MoveIt video.
- Developed ROS packages for Gazebo simulation support, hardware interfacing, and integration with Machine Learning and Computer Vision modules using multiple depth cameras.



Check out the video link where we provide details on the MoveIt Task Constructor pick-and-place demo on Rviz with a Panda robot arm.

Further services smartR AI provides within the automation application space:

- Synthetic Data Generation: the benefits to clients being cost reduction, greater speed, agility, more intelligence and cutting-edge privacy.
- Rviz: smartR AI uses this robot workflow visualization and productivity monitoring tool due to its robust 3D visualizer abilities for the Robot Operating System (ROS) framework.

At smartR AI, we invent tomorrow's products today by breaking free from pre-programmed rules.

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About smartR AI

smartR AI™ is committed to developing life-changing artificial intelligence applications based on the evolution of interactions, behavior changes, and emotion detection.

Focusing on behavioral intelligence and interconnections with IoT, we use AI applications to understand, interpret, predict, and respond to complex scenarios. As intelligence moves to the edge of the network smartR AI is all about doing things the smartest way.

To solve complex real-world problems and optimize decision-making, smartR AI uses its intelligence-based proprietary engines. These engines ensure optimal efficiency and performance, improve quality, and reduce human error. They learn faster, leverage existing and historical knowledge, provide data efficiency, and allow for connectivity, to name just a few of their attributes.

The team builds products with the latest AI techniques, knows how to help integrate AI into your product, and our expertise and diversity of knowledge ensure clients benefit from high levels of adaptability. We listen to your ideas and turn them into reality.

Keep in touch, follow us on LinkedIn

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