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Recognition Robotics

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Perception of the environment is an essential skill for robotic applications that interact with their surroundings. The ability to recognize objects, people, or dynamic situations often comes with perception.. This skill is of paramount importance in many use cases, from industrial to social robotics. Robots that can accurately perceive and understand their environment are critical for tasks like manufacturing, delivery, healthcare, and assisting humans in homes or public spaces. Object recognition enables robots to identify items, tools, and obstacles in their vicinity. This allows industrial robots to select the right parts or manipulators, allows logistics robots to handle packages, and allows autonomous vehicles to avoid collisions. Activity recognition allows robots to interpret human motions and behaviors. This facilitates safe and intuitive collaboration in shared workspaces. It also permits service robots to determine user intent and respond appropriately. People recognition provides robots the means to identify individuals. This capability supports applications like personalized assistance, healthcare monitoring, and security surveillance. Altogether, these skills make up the fundamental building blocks for robots to operate adaptively in the real world.

