NEXT LEVEL INNOVATION IN ROBOTICS AND AUTONOMY

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Title: **Automated Inventory Management using Machine Vision: Recognition, Counting, and Replenishment**

Automated inventory management using an industrial machine vision system is effective for maintenance of inventory in order to balance the demand and supply, minimize the production cost and stock shortening. Automated inventory management using machine vision can be interpreted as automatic identification and localization of objects through matching of extracted features in the image of stock items with a predefined template to find instances of it.

The objective of this talk is to introduce the developed algorithms for object identification, localization, report generation, and stock replenishment notification for inventory level monitoring in the real time video stream based on the object appearance model. The object appearance model is considered as a visual signature by which individual object can be detected anywhere in the scene image generated via camera feed of inventory.
Some of the developed algorithms will be discussed along with the introduction of software developed for inventory level monitoring and future scope. This talk will also introduce the existing challenges in indoor and outdoor scenes for machine vision automation.