

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/02/2026

(21) Application No.202641011891 A

(43) Publication Date : 13/02/2026

(54) Title of the invention : Smart Trolley Self-Checkout System

(51) International classification	:G06Q 20/20, G06Q 20/32, G06Q 20/40, G06K 7/10, G06Q 30/06	(71) Name of Applicant : <b>1)Woxsen University</b> Address of Applicant :Kamkole, Sadashivpet, Sangareddy District, Hyderabad, India 502345 Kamkole Telangana India (72) Name of Inventor : <b>1)Kesava Datta Garlapati</b> <b>2)Dr. Bhanu Prakash S</b> <b>3)Srikanth Miriyala</b> <b>4)Shaik Imran</b> <b>5)Sana Sujan Kumar Reddy</b>
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present invention relates to a smart trolley self-checkout system for automated retail transactions. The system integrates RFID-based product identification, LiDAR-based physical presence verification, and weight-based validation using load cells to enable multi-layer verification of products placed in a shopping trolley. An embedded control unit cross-verifies product identity, presence, and weight to prevent unauthorized addition, removal, or substitution of items. Verified products are displayed on a user interface and billed automatically, with payment completed directly at the trolley through digital payment modes. The system further synchronizes verified transactions with a backend inventory platform, thereby reducing checkout time, minimizing fraud, improving inventory accuracy, and enhancing overall retail efficiency.

No. of Pages : 18 No. of Claims : 10