**Smart Object and Text Recognition System for Enhanced Product Identification**

**Abstract**:

The Smart Object and Text Recognition System for Enhanced Product Identification (SOTRSEPI) project has been designed to provide a radical change in the way that product identification is undertaken by harnessing cutting-edge AI technologies, incorporating both object recognition systems and its associated information. It is built on top of YOLO (You Only Look Once) for efficient object detection and powered by Tesseract for reliable text recognition to reach remarkable accuracy in classifying products in live scenarios.

It improves the feature detection aspects that are common in image processing, which could potentially be used on images to preprocess or manipulate visual data making it more recognizable. The application uses PostgreSQL in the background to persist and handle product data properly. The gRPC is used for better communication between components (on the server side written in GoLang).

SOTRSEPI is held as a user-friendly application wrapped in the framework of Flutter technology, which gives that modern appearance facilitating quick access and quickly garnering relevant item knowledge directly enabling one to make short-circuit decisions. This new feature ensures advanced product identification and at the same time facilitation enables inventory control via a more efficient user experience in both residential and commercial venues.