Vision-based Intelligent Forklift Automatic Guided Vehicle (AGV)

http://exhibition.cintec.cuhk.edu.hk/exhibition/project-item/forklift-agv/

Prof. LIU Yunhui  
Dr. Li Luyang  
Dr. FANG Mu  
Mr. ZHENG Zhizeng  
Dr. TANG Hengbo  
Department of Mechanical and Automation Engineering

Dr. Tianjiao Jiang  
Department of Finance

Project Category: Robotics & Automation

Project Description

This intelligent forklift AGV is built on an advanced robotic and automation technology for improving the quality and productivity of manufacturing and service industries as the next generation industrial transporting robot. It can replace manually operated forklift trucks to perform various transporting tasks in factories, warehouses, etc. without changing current settings of the working environments. It provides an innovative and cost-effective solution to automation in manufacturing and service industries.
This AGV uses vision as primary sensor and fuses visual information with measurement of other sensors for navigation, positioning and motion control in natural industrial environment, which is Patent Cooperation Treaty (PCT) protected.

**Key features:**

- **Valuable Core Technology:** “New Vision-based Navigation Technology for Intelligent Vehicles / Mobile Robots” - for navigation, positioning and motion control in natural environments
- **Effective Solutions:** Besides full set AGV, an environmental-friendly solution for upgrading/retrofitting existing factory forklift to intelligent AGV is available.
- **Easy to adopt:** No need to alter the current settings of factories and warehouses. No tracks or laser guidance are required. As a result, switching cost is low.
- **Flexibility:** Not only can move automatically, our AGV also keeps the manual control option.