

Autonomous System and Machine Vision Research Cluster

The Autonomous System and Machine Vision (Auto-MAV) Research Cluster is dedicated to the research and development of techniques and applications of computer, automation, robotics and machine vision. The increased use of intelligent robotic systems in current indoor and outdoor applications bears testimony to the efforts made by researchers on all fronts. Autonomous Mobile Systems have greater autonomy than before, and new applications abound - ranging from factory transport systems, airport transport systems, road/vehicular systems, to military applications,



OBJECTIVE

- To attract researchers in the field of Autonomous Mobile System Design and Machine Vision.
- To build up national and international co-operation with the industry and fellow institutes
- To lead in autonomous and machine vision technology and applications area
- To enhance publication output in terms of refereed journal articles

RESEARCH INTEREST AREAS

Autonomous Mobile System & Artificial Intelligence

- Modeling and Control
- Map Building and Path Planning
- Decision Making and Autonomy
- Real Time Systems

Machine Vision System

- 2D and 3D Image Processing
- Signal Processing and Analysis
- Recognition and Positioning
- Real Time Processing
- Biometric Systems

UAV & Anti-Gravity

- Vertical Short Take-Off and Landing (V/STOL) Air Craft
- Active Landing Gear Stability System

Robotics

- Navigation and Motion Planning
- Robotic Modeling and Design
- Robotic Control Systems
- Communication, Perceiving and Acting Robotics



automated patrol systems, homeland security surveillance, and rescue operations. Machine Vision (MAV) is the application of computer vision to industry and manufacturing. Whereas computer vision is mainly focused on machine-based image processing, machine vision most often requires digital input/output devices and computer networks to control other manufacturing equipment such as robotic arms. MV is a subfield of engineering that incorporates computer science, optics, mechanical engineering, and industrial automation.

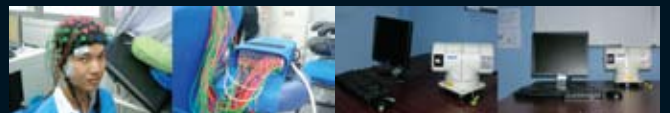
RESEARCH ACTIVITIES

Current Projects

- Real-Time Mobile Robot Motion Control for Stable-Target Trajectory Tracking Control
- Design and Development of Autonomous Quad-Rotor UAV to Study Flight Dynamics and Control
- Real-Time Biometric Face Recognition System for Criminal Investigation and Identification
- Investigation on Stereo Vision Based Robotic Bin Picking System for Agile Manufacturing
- Mobile Robot Positioning and Stable Target Recognition Based on Stereo Vision System
- Development of Bipedal Walking Robot with Balance and Control
- Design of Artificial Intelligence Diagnostics System for Tuberculosis
- Embedded Heart Disorder Portable Screening System Using Time-frequency Features and Extraction Algorithm of Heart Sound Signals
- Design of A Portable Continuous Blood Pressure Monitoring Kit With Built-in Low and High Blood Pressure Early Warnings

Future Projects

- Total Staff, Student, and Inventory Management and Monitoring Security System (T-SIMS)
- Development and Application of Hydrofuel Concept For 4 Stroke Carburetor Engine
- Development of UAV Active Landing Gear System for Vibration Damping and Stability Improvement
- Automated Inspection System for Color and Shape Using Machine Vision
- Development of A New Hybrid Parallel Mechanism



CONTACT

Dr. Hazry Desa

Head of Cluster, Automation System and Machine Vision Cluster, Universiti Malaysia Perlis(UniMAP), Bangunan Pengkalan Indah, Jalan Pengkalan Asam, 01000, Kangar, Perlis, MALAYSIA.

Tel: 04-9798499

Fax: 04-9798142