RESEARCH IN CENTER FOR ARTIFICIAL INTELLIGENCE TECHNOLOGY : CURRENT AND ISSUES

Faculty of Information System and Technology
Universiti Kebangsaan Malaysia
(National University of Malaysia)

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National University Of Malaysia

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FACULTY OF INFORMATION SCIENCE AND TECHNOLOGY, NATIONAL UNIVERSITY OF MALAYSIA
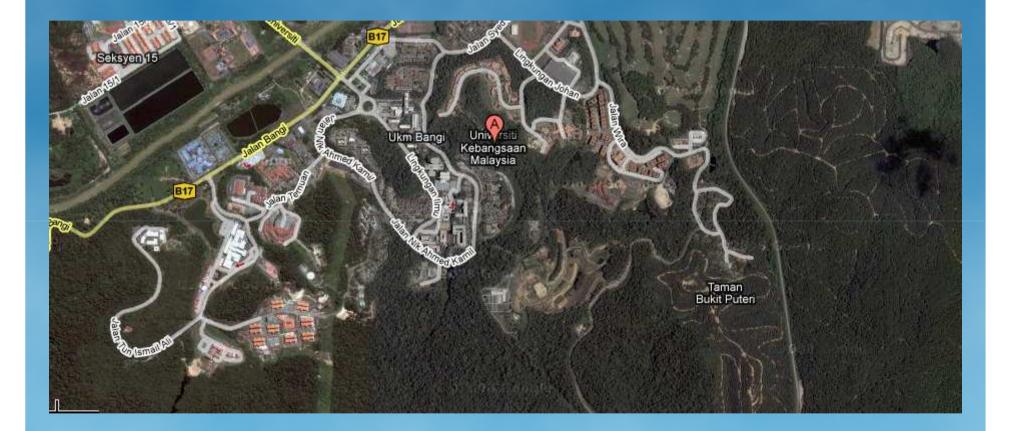
Universiti Kebangsaan Malaysia, UKM

- UKM is located in Bangi, about 20 km from Kuala Lumpur.
- Established in 1970.
- One of the four research universities in Malaysia.

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FTSM

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FTSM

- Established as a faculty in 1994.
- Expansion of the department of computer science (established in 1983).
- Faculty members:
  - 6 professors
  - 10 associate professors
  - 17 senior lecturers
  - 59 lecturers
  - 7 tutors
  - 5 teachers

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Departments

- Computer Science

- Information Science

- Science & System Management

- Industrial Computing

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Center For Artificial Intelligence Technology (CAIT)

- CAIT is a center of excellent at the Faculty of Information Science and Technology of Universiti Kebangsaan Malaysia.

- The center's main purpose is the application of Artificial Intelligence techniques and methods to support various disciplines through research, teaching and consultancy.

- Among our current fully funded researches are : The Preservation of Old Malay Manuscripts through JawiWare, Smart and Secure Home System, University Timetabling, The Development of Malaysian Medical Data Mining, Intelligence Data Miner, Agent-based Rough Set Data Mining Tool and Fuzzy Tabu-based Optimization for Job Shop Scheduling,

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Research Department

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Data Mining and Optimization (DMO) Group

- **Group Leader:**
- **Dr. Abdul Razak Hamdan**

Researchers

- Dr.Azuraliza Abu Bakar
- Dr. Masri Ayub
- Dr. Mohd Juzaiddin Ab Aziz
- Dr. Salwani Abdullah

- Dr. Zalinda Othman
- Dr. Zulaiha Ali Othman
- Mr. Mohd Zakree Ahmad Nazri
- Ms Suhaila Zainuddin
- Mr Ahmad Tarmizi A. Ghani

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Research List

DMO Research

- Intelligence Medical Data Miner.
- An Agent Based Rough Set Data Mining Tool
- An Improvement Of Data Mining Process Using Agent.
- Data Mining Approach in Production Planning and Control
- Mining Outliers For Deviation Detection In Text Using Rough Set Theory.
- Genetic Fuzzy Agent-based Framework for Job Shop Scheduling in Manufacturing Industries.
- Ontology Learning and Population From Text to Support Legal Reasoning.
- Agents Based Hierarchical Diff-Edf Scheduling Model and Algorithm for Real-Time Networks.
- Intelligence Decision Support System for employee''s performance prediction.
- E-Commerce Sustainability Modeling Using Rough Set Theory.
- Deviation Detection Models for IJN Cardiac Patient Dataset Using Data Mining.
- A Dynamic Automated Scheduler Using Meta-Heuristic Approach.
- Multi-objective Heuristics For Real-World Scheduling Problem.
- Network Flow Optimization for Scalable Data Mining.

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Knowledge Technology Group

- **Group Leader:**
- **Dr. Shahrul Azman Mohd Noah**

- **Researchers**
- Dr. Zawiyah M Yusoff
- Dr. Nazlia Omar
- Dr. Mohd Juzaiddin Ab Aziz
- Ms Zuraidah Abdullah
- Dr. Tg Mohd Tg Sembok
- Dr. Juhana Salim
- Dr. Maryati Mohd Yusoff
- Dr. Yazrina Yahya
- Ms Junaidah Mohd Kassim

- Ms Umi Asma
- Mr Mohd Zakree Ahmad Nazri
- Mdm Saidah Saad
- Mdm Siti Fadzilah Mat Nor
- Ms Dian Idrayani Jambari
- Mdm Masnizah Mohamad
- Mdm Sherena Mohamad Arif
- Ms Lailatulqadri Zakaria
- Mr Onn Azraai Puade

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Research List

Knowledge Technology Research

- The Development of Search Engine for Malaysian Business Directory
- Semantic Knowledge Extraction From Described Images
- Natural Language Understanding Engine For English Essay Comprehension
- Development Of A Semantic Role Assignment Tool For The Automation Of Database Design
- Intelligence Web Tutor
- A Statistical Model for a Malay Syntactic Parser
- A Linguistic Model and Method for Ontology Learning and Population from Text
- Logical-Quantum Model in Information Retrieval
- Semantic Digital Library for Academic Institution
- The Evaluation and Development of An Ontology Based Health Information System in Malaysia
- Mine Your Own Data, Mynda (Online Intelligent Data Mining)

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Pattern Recognition (PR) GROUP

Group Leader:

- **Prof Dr. Khairuddin Omar**

Researchers

- Dr.Mohd Shanudin Zakaria
- Dr. Md Jan Nordin
- Dr. Liong Choong Yeun
- Dr. Shahnorbanun Shahran
- Dr. Siti Norul Huda Sh Abdullah
- Dr. Anton Satria Prabuwono
- Mr. Mohd Zamri Murah
- Mr. Mohd Faidzul Nasruddin

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Research List

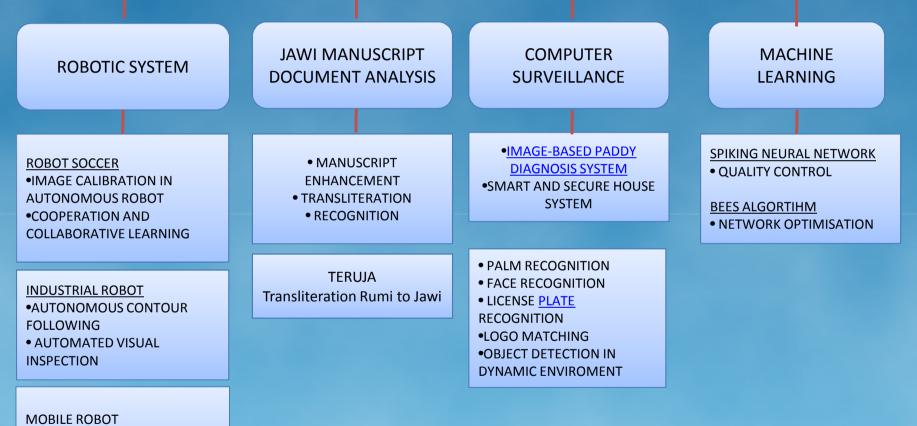**Pattern Recognition Research**

- The Development of JawiWARE
- Segmenting Handwritten Jawi Text using Voronoi Diagram
- Development of Lubricant Sensor and Detector for Vechiles
- Development of Jawi Optical Character Recognition System
- Development of Automated Malay-Jawi Documents Transliteration for Web Service Using XML-based Protocol.
- An Improvement of Data Mining Process Using Agent
- The Development of Web-Base Knowledge Miner for Medical Data
- Development of Jawi Handwritten Characters Recognition System.
- Smart and Secure House System, Projek Arus Perdana (AP)
- The Design and Development of Intelligence Three-Dimensional Model Recognition and Inspection System in Die Stamping Industry
- Development of Intelligence Robot System for the Automation of Highly Skilled Manufacturing Process

Research Groups

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Research Mapping For Pattern Recognition

ROBOTIC SYSTEM

JAWI MANUSCRIPT DOCUMENT ANALYSIS

COMPUTER SURVEILLANCE

MACHINE LEARNING

ROBOT SOCCER
- IMAGE CALIBRATION IN AUTONOMOUS ROBOT
- COOPERATION AND COLLABORATIVE LEARNING

INDUSTRIAL ROBOT
- AUTONOMOUS CONTOUR FOLLOWING
- AUTOMATED VISUAL INSPECTION

MOBILE ROBOT
- LOCALISATION & MAPPING
- HUMAN ROBOT INTERACTION

- MANUSCRIPT ENHANCEMENT
- TRANSLITERATION
- RECOGNITION

TERUJA
Transliteration Rumi to Jawi

- IMAGE-BASED PADDY DIAGNOSIS SYSTEM
- SMART AND SECURE HOUSE SYSTEM

- PALM RECOGNITION
- FACE RECOGNITION
- LICENSE PLATE RECOGNITION
- LOGO MATCHING
- OBJECT DETECTION IN DYNAMIC ENVIROMENT

SPIKING NEURAL NETWORK
- QUALITY CONTROL

BEES ALGORTIHM
- NETWORK OPTIMISATION