Intelligent Computing Research Group

Faculty of Computer Science and Information Technology
Universiti Putra Malaysia

The Group Mission This research group works towards establishing new techniques that can intelligently transform massive data into useful information and knowledge. The main research areas that we are focusing on are data mining & deep learning, embedded systems & robotics, autonomous system & software agent, computational linguistics & semantic web, optimization & evolutionary computing, bioinformatics & system biology

Applications and Involvements We have built solutions for real world problems such as agriculture, medical & pharmaceutical, native language, education and learning, biotechnology, economy, information security, and many more…

Group Members

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Data Mining & Deep Learning

We concentrate on building knowledge reduction models for data classification as well as discovering strong associations among data by various algorithms for searching frequent patterns. (image, video, web, text, temporal, spatio-temporal)

Autonomous System & Software Agent

We address seamless interoperability between heterogeneous system and applications such as Internet of Things (IoT) for intelligent environments, prediction models for reasoning and recognition in smart home environment as well as classification of trajectory generation and control of miniature quadrotor used for aerial vehicles.

Optimization & Evolutionary

We tend to find a better algorithm for solving various combinatorial problems is our main concern. We focus on improving meta-heuristic techniques for solving university timetabling and agricultural problems involving optimization in planting areas and crop systems.

Computational Linguistics & Semantic

We believe that this area is going to play a key role in advanced computing. We deal with the semantic knowledge representation of texts and focus on transforming the learned rules into a model reusable by computer programs. This will enable automation and seamless interoperation between systems in which human intervention is kept at a minimum.

Bioinformatics & System Biology

Bioinformatics focuses on genome annotation, which is marking the genes and other biological features on a DNA sequence. System biology emphasizes on the study of a whole organisms. We are interested to formulate a novel framework of biology as a system.

Research Grant

- Assoc. Prof. Dr. Nurfadhlina Mohd Sharef, Interactive Machine Learning based on Deep Reinforcement Learning and Generative Adversarial Network Hybrid for Digital Twin. Sponsor: Air Force Office of Scientific Research (International); Duration: 29-Sep-21-28-Sep-24; Amount: RM245,000.00
- Dr. Hazlina Hamdan, Effective Federated Learning for In-Hospital Mortality Prediction in Multi-Center ICU under Non-IID and Unbalanced EHRs Datasets. Sponsor: MOHE-FRGS (National); Duration: 7-Sep-21-6-Sep-24; Amount: RM95,000.00
- Dr. Nor Azura Husin, Multimodal Hierarchical Fusion Feature Model Incorporating Attention Mechanism with World Level Alignment. Sponsor: MOHE-FRGS (National); Duration: 1-Nov-20-31-Oct-23; Amount: RM115,500.00
- Assoc. Prof. Dr. Razali Yaakob, An Improved Feature Extraction and Multi-Label Multi-class Classification in Deep Learning for Pleural Tuberculosis Diagnosis. Sponsor: MOHE-FRGS (National); Duration: 1-Nov-20-31-Oct-23; Amount: RM109,707.00
- Dr. Noridayu Manshor, An improved Multi-Segmentation and Classification Algorithm using Deep Learning for Iris Recognition in Unconstrained Environments. Sponsor: UPM-Geran Putra; Duration: 1-Dec-20-30-Dec-23; Amount: RM50,000.00
- Assoc. Prof. Dr. Thinagaran Perumal, Handling Imbalanced Features Through Synthetic Labels Correlation for Efficient Human Activity Recognition in A Smart Home Environment. Sponsor: UPM-Geran Putra Inisisatif; Duration: 1-Sep-22-28-Feb-25; Amount: RM8,000.00
- Dr. Raihani Mohamed, Improving Multiple Resident Activity, Recognition in Smart Home Environment. Sponsor: UPM-GP-IPM; Duration: 15-Jun-21-14-Jan-24; Amount: RM58,600.00
- Dr. Azree Shahrel Ahmad Nazri, Designing a Traceability System of Pesticide Residues in Fruits and Vegetables Along the Food Supply Chain. Sponsor: UPM- GP-IPS; Duration: 15-Jun-21-14-Jan-24; Amount: RM25,000.00

Entry Requirements

DOCTOR OF PHILOSOPHY

The applicant should possess:

i) A Master's Degree or its equivalent in the field related to the field of PhD applied for AND candidates must have completed at least one (1) of their earlier Degrees (Master's or Bachelor's) in Computing or related to computing; or

ii) Bachelor's degree with a minimum CGPA 3.75 or equivalent to a First Class Bachelor's Degree and passed a rigorous internal assessment.

MASTER OF SCIENCE

i) Bachelor's degree or equivalent, in computing, science and technology or related to computing, with a minimum CGPA 3.00; or

ii) Bachelor's degree or equivalent, in computing, science and technology or related to computing with a CGPA of 2.75 – 2.99 may be considered based on a minimum of 3 years of work experience in the related field; or

iii) Bachelor's degree or equivalent, in computing, science and technology or related to computing with a CGPA of 2.000 – 2.749 may be considered based on a minimum of 5 years of work experience in the related field.

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