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## Azlan Ismail (PhD)

### Associate Professor

School of Computing Sciences,  
College of Computing, Informatics and Mathematics (KPPIM)

### Senior Research Fellow

Institute for Big Data Analytics and Artificial Intelligence (IBDAAI)

Universiti Teknologi MARA (UiTM)

Shah Alam, Selangor, 40450

MALAYSIA

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Scopus Research ID: 55377382600

Orchid ID: 0000-0002-2535-6359



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Dr. Azlan Ismail is an Associate Professor and senior research fellow specializing in data analytics, artificial intelligence, and computer science. He began his academic journey at Universiti Teknologi Malaysia, where he earned both his Bachelor and Master of Science degrees in Computer Science in 2000 and 2003, respectively. Driven by a passion for advanced research, he completed his Ph.D. at the University of Wollongong, Australia, in 2012. Following this, Dr. Ismail enhanced his expertise through post-doctoral studies at the University of Oxford's prestigious Department of Computer Science from 2015 to 2017.

Dr. Ismail has held influential roles, including as Head of Data Analytics with the University Transformation Division, where he led strategic initiatives that strengthened the institution's data capabilities and contributed to its digital evolution. In recognition of his impactful work, he was promoted to Associate Professor in 2021. To further pursue his research ambitions, he joined the Institute for Big Data Analytics & Artificial Intelligence (IBDAAI) as a senior research fellow, where he continues to drive advancements in big data and AI applications. His academic and professional contributions reflect a commitment to shaping the future of data science and AI research on both national and international stages.

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## ACADEMIC POSITION

**Associate Professor**, School of Computing Sciences, College of Computing, Informatics and Mathematics, Universiti Teknologi MARA, Shah Alam

OCT 2021 - PRESENT

**Senior Lecturer**, Faculty of Computer and Mathematical Science, Universiti Teknologi MARA, Shah Alam

DEC 2012 - OCT 2021

**Lecturer**, Faculty of Computer and Mathematical Science, Universiti Teknologi MARA, Shah Alam, Malaysia

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OCT 2003 - DEC 2012

**Contract Lecturer**, Faculty of Computer and Mathematical Science, Universiti Teknologi MARA, Shah Alam, Malaysia

01 FEB 2001 - OCT 2003

## OTHER POSITIONS / ROLES

**Senior Research Fellow**, Institute for Big Data Analytics and Artificial Intelligence, Universiti Teknologi MARA, Shah Alam

SEP 2021 - PRESENT

**Head of Data Analytic**, University Transformation Division, Universiti Teknologi MARA, Shah Alam

SEP 2019 - AUG 2021

**Coordinator of Advanced Computing and Communication Cluster**, Institute of Research Management and Innovation (IRMI), Universiti Teknologi MARA, Shah Alam

FEB 2018 - SEP 2019

**Postdoctoral Researcher**, Department of Computer Science, University of Oxford, UK

MAC 2015 - FEB 2017

**Fellow**, i-Learn Centre, Universiti Teknologi MARA, Shah Alam, Malaysia

2006 - 2007

## EDUCATION

**PhD**, University of Wollongong, Australia - (Computer Science)

NOV 2007 - 12 DEC 2012

**Master of Science**, Universiti Teknologi Malaysia, Malaysia - (*Computer Science – Real-time Software Engineering*)

2001 - OCT 2003

**Bachelor of Computer Science**, Universiti Teknologi Malaysia, Malaysia

1996 - 2000

## ACADEMIC SERVICES

Curriculum  
Development /  
Review

Committee of Curriculum Development for MSc Computer Science, FSKM, UiTM (2002)

Committee of Curriculum Review for MSc Information Technology, FSKM, UiTM (2012 - 2013)

	<p>Committee of Curriculum Development for Master of Computer Science in Web Science, FSKM, UiTM (2013 - 2014)</p> <p>Committee of Curriculum Development for Master of Software Quality Engineering, FSKM, UiTM (2013 - 2014)</p> <p>Committee of Curriculum Review for MSc Computer Science (CS707), KPPIM, UiTM (2013 - 2014, 2017, 2022 - present)</p> <p>Committee of Curriculum Review for MSc Data Science (CS779), KPPIM, UiTM (2023)</p>
External Examiner	<p>Viva Voce of Master by Research at Universiti Kebangsaan Malaysia.</p> <p><i>Rangkaian Pembelajaran Mendalam Berbilang Skala untuk Pengecaman Emosi Berdasarkan Riak Wajah Mikro</i> (17/11/2022)</p>
Internal Examiner	<p>Viva Mock Session of PhD:</p> <ul style="list-style-type: none"> <li>• <i>Corporation Credit Risk Assessment Predictive Model using Multidimensional Features and Machine Learning Techniques</i> (15/3/2022)</li> </ul> <p>Defense of Research Proposal Session of PhD:</p> <ul style="list-style-type: none"> <li>• <i>Early Fault Detection of Multiple Wind Turbines via Concept Drift Method</i> (21/9/2022)</li> </ul> <p>Viva Voce Session of Master by Research:</p> <ul style="list-style-type: none"> <li>• <i>Simulation Improvement Model of Queuing Systems at the Outpatient Department Health Clinic</i> (18/10/2023)</li> </ul> <p>Defense of Research Proposal Session of Master by Research:</p> <ul style="list-style-type: none"> <li>• <i>Optimization of Energy Management Strategy and Configuration of Hybrid Energy Storage System</i> (14/6/2022)</li> <li>• <i>Hybrid Scheduling Algorithm Based on Dynamic Priority and Adaptive Method for Real-time QoS Monitoring in Smart Agriculture</i> (21/7/2023)</li> </ul>
Chairperson	<p>Viva Voce Session of PhD:</p> <ul style="list-style-type: none"> <li>• <i>Hybrid Sampling RACOG-RUS for Imbalanced Data in Water Quality Classification</i> (4/1/2024)</li> </ul> <p>Viva Mock Session of PhD:</p> <ul style="list-style-type: none"> <li>• <i>Context Enrichment Framework for Word Ambiguity Resolution in Sentiment Analysis</i> (13/7/2023)</li> </ul> <p>Defense of Research Proposal Session of PhD:</p> <ul style="list-style-type: none"> <li>• <i>Deep Convolution Feature Reconstruction Algorithm for Detecting Anomaly in Chest X-Ray Images</i> (18/3/2022)</li> <li>• <i>Hyperparameter Tuning via Multi-objective Evolutionary Algorithm in the Deep Learning Model</i> (3/10/2022)</li> <li>• <i>Enhancing Machine Learning Models through Hybrid Feature Selection Techniques using Modified FRE-ELM and Lasso-ELM Approaches for Improved Classification of Covid-19 Patients</i> (31/3/2023)</li> <li>• <i>An Integrated Multicriteria Decision Making Model for Selection of Contractors in Tender Evaluation</i> (12/7/2023)</li> <li>• <i>Non-Contrast CCTA Image Segmentation using Hybrid Deep Learning</i> (18/7/2023)</li> </ul>



- *A Trust Model to detect and mitigate trust-related attacks in service-based Social IoT* (7/4/2023)

Defense of Research Proposal Session of Master by Research:

- *Cyber Artemotional Model in Cyber Security Employees Ethical Competence* (28/9/2022)
- *Visualizing Learning Analytic to Explore Student Engagement in UiTM MOOCS: The UFuture Case Study* (22/3/2022)
- *Social Distancing Parameters Violation Monitoring using Deep Neural Network Models* (19/9/2022)

Operational	Committee of exam operation, FSKM, UiTM (2002 - 2004) Chairman of exam operation, FSKM, UiTM (2005)
Resource person	Software Engineering subject, a course offered in Bachelor of Computer Science, KPPIM, UiTM (2012 - 2014, 2024 - present) Parallel Processing subject, a course offered in Master of Computer Science, KPPIM, UiTM (2012 - 2014, 2017 - 2019) Advanced Data Science Technology, a course offered in Master of Data Science, KPPIM, UiTM (2018 - present)
Student Advisor	Programming competition between UiTM branches (2002)
Academic Programme Visibility	Committee for promoting academic programmes offered by FSKM, UiTM (2013)

## PROFESSIONAL SERVICES

External Assessor	External Assessor for Bachelor of Information Technology offered at SEGi College Subang Jaya (2025 - 2027)
Software Project Committee	Project Manager of Data Warehouse University, UiTM (2020 - 2021) Committee of e-Office software project, FSKM, UiTM (2002 - 2003) Committee of FSKM homepage project, FSKM, UiTM (2003) Committee of E-learning project, UiTM (2004 - 2006) Committee of student project evaluation for the bachelor programs, FSKM, UiTM (2013)
Trainer	Trainer of E-Learning Management System, UiTM (2005-2006) Trainer of Big Data Analytics, UiTM Kota Bharu (2017)
Journal Reviewer	Journal of Systems and Software, Elsevier - JCR Q1/Q2, (2015) Journal of Information & Communication Technology, UUM - Scopus, (2018) Journal of Software Evolution and Process, Wiley - JCR Q3, (2020) Journal of Parallel and Distributed Computing, Elsevier - JCR Q1, (2020)

	<p>Journal of KSII Transactions on Internet and Information Systems - JCR Q4, (2020)</p> <p>Journal of Cluster Computing, Springer - JCR Q1/Q2, (2023)</p> <p>Journal of Supercomputing, Springer - JCR Q2, (2023)</p> <p>Journal of Education and Information Technologies - JCR Q1, (2023)</p> <p>Journal of Artificial Intelligence Review - JCR Q1, (2024)</p>
Track/Session Chair	<p>6th International Conference on Soft Computing in Data Science, SCDS 2021 (2-3 Nov)</p> <p>(<a href="https://aaec.uitm.edu.my/scds2021/">https://aaec.uitm.edu.my/scds2021/</a>)</p> <p>8th International Conference on Recent Advances and Innovations in Engineering, ICRAIE 2023 (2-3 Dec) - IEEE Conference Record #59459</p> <p>(<a href="https://icraie2023.com/">https://icraie2023.com/</a>)</p>
Conference Reviewer	<p>National Computer Science and Mathematics Postgraduate Colloquium, FSKM, UiTM (2013)</p> <p>19th International Conference on Fundamental Approaches to Software Engineering, FASE 2016</p> <p>3rd International Conference on Soft Computing in Data Science, SCDS 2017 (27 - 28 Nov)</p> <p>(<a href="https://aaec.uitm.edu.my/scds2017/index.php">https://aaec.uitm.edu.my/scds2017/index.php</a>)</p> <p>Fourth International Conference on Information Retrieval and Knowledge Management, CAMP 2018 (26-28 Mac)</p> <p>(<a href="http://camp18.pecamp.org/">http://camp18.pecamp.org/</a>)</p> <p>3rd International Conference of Reliable Information and Communication Technology 2018 (IRICT 2018) – (23-24 June)</p> <p>(<a href="http://www.ysrgst.org/irict2018/?page_id=693">http://www.ysrgst.org/irict2018/?page_id=693</a>)</p> <p>5th International Conference on User Science and Engineering, Malaysia, i-USEr 2018 (28-30 Aug)</p> <p>(<a href="https://fskm.uitm.edu.my/iuser2018/">https://fskm.uitm.edu.my/iuser2018/</a>)</p> <p>8th International Conference on Recent Advances and Innovations in Engineering, ICRAIE 2023 (2-3 Dec) - IEEE Conference Record #59459</p> <p>(<a href="https://icraie2023.com/">https://icraie2023.com/</a>)</p>
Facilitator	<p>Centralized Data Warehouse Workshop: Feasibility Study with Government Agencies in Malaysia (15/4/25 - 16/4/25)</p>
Coordinator	<p>KPT Grants (FRGS, PRGS, TRGS, LRGS) Evaluation for Information and Communication Technology Cluster, UiTM - IPT Level - (2020)</p>
Editor	<p>Technical editor of Journal of Emerging Economies and Islamic Research, UiTM (<a href="http://www.jeeir.com/v2/">http://www.jeeir.com/v2/</a>) (2016)</p> <p>Editor of Malaysian Journal of Computing, UiTM (<a href="http://mjoc.uitm.edu.my/">http://mjoc.uitm.edu.my/</a>) (2017-2019)</p> <p>Language Editor for a Workshop, <i>Bengkel Penulisan High Impact Research &amp; Publication Siri 2</i>, at UiTM, Shah Alam (2 - 4 Apr, 2018)</p>
Judge	<p>Panel of Judges, Invention, Innovation &amp; Design Exposition iindex 2024</p>

Conference Committee	<p>Organizing Committee of the Asia Pacific Workshop on e-Customer Relationship Management organized by FSKM, UiTM (2002)</p> <p>Organizing Committee of Computer Science, Technology and Networking Conference organized by FSKM, UiTM (2006)</p> <p>Organizing Committee of the International Conference on Analytics and Computing Engineering (ACE 2015) organized by FSKM, UiTM (2014)</p> <p>Technical Committee 3rd International Conference of Reliable Information and Communication Technology 2018 (IRICT 2018) – June 23-24  <a href="http://www.ysrgst.org/irict2018/?page_id=693">http://www.ysrgst.org/irict2018/?page_id=693</a></p> <p>Scientific Committee 5th International Conference on Science &amp; Social Research, (CSSR 2018) - Dec 5-6 (<a href="http://cssr.uitm.edu.my/2018/index.php">http://cssr.uitm.edu.my/2018/index.php</a>)</p>
Interviewer	Interviewer of postgraduate research scholarships, FSKM, UiTM (2014)
Speaker	<p>A talk titled, <i>TXTB-Vision: AI-Powered Tuberculosis Detection and Explanability</i>, for Continuous Medical Education, organized by Unit Perkembangan Kesihatan Awam, JKN Kedah, Malaysia (Nov 25, 2024)</p> <p>A talk titled, <i>Transforming Final Year Project Report into Journal Article</i>, for Postgraduate Research Symposium Series IV 2023 (PEERS' 23), organized by College of Computing, Informatics and Mathematics (KPPIM), Universiti Teknologi MARA (UiTM)</p> <p>A talk titled, <i>Data Quality</i>, organized by Registrar Department, UiTM, (27 Mac, 2017)</p> <p>A talk titled, <i>Reflection: Postdoctoral Experience at the University of Oxford</i>, organized by the Department of Computer Science, FSKM, UiTM, (28 April, 2017)</p> <p>A talk titled, <i>PhD Knowledge Sharing Talk</i>, organized by the students from Master of Computer Science(Web Technology), (26 Nov, 2017)</p>
Working Committee	<p>Committee of Working Paper for establishing a Center of Excellence, FSKM, UiTM (2013)</p> <p>Committee of Big Data Lab Launching, UiTM (2017)</p> <p>Committee of University Pioneering Framework, UiTM (2018)</p> <p>Committee of University Digital Campus Framework, UiTM (2019)</p>
Auditor	<p>Performance Monitoring for a Centre of Excellence, organized by the Institute of Research Management &amp; Innovation, UiTM (4 Apr, 2018)</p> <p>Audit Documents for upgrading tier 5 to tier 4 (EK), organized by the Institute of Research Management &amp; Innovation, UiTM (7 May, 2018; 27 Aug 2018)</p>
Membership	Associate member of Majlis Profesor Negara

## TEACHING EXPERIENCE

Computer and Information Processing

(2001 - 2003)

Algorithm Fundamentals	(2003 - 2004)
Web Programming	(2003 - 2006)
Advanced Internet and Web Programming	(2005)
Object-oriented Programming	(2004, 2012, 2017)
Introduction to Computer Programming	(2004, 2012)
Software Engineering	(2012 - 2014) (2021 - present)
Web System Engineering for Master of Information Technology	(2012 - 2013)
Parallel Computing	(2013 - 2014, 2017 - 2019)
Web Architecture	(2017 - 2020)
Advanced Data Science Technology	(2018 - present)

## AWARDS

Academic Awards	Excellent Service Award of 2023, from Deputy Vice Chancellor (Research & Innovation), University Teknologi MARA (UiTM) (2024)
	Journal Publication Award, Majlis Anugerah Akademik Universiti (AAU) Peringkat KPPIM (2024)
	Q1/Q2 Publication Award 2022, Institute for Big Data Analytics and Artificial Intelligence (IBDAAI), Universiti Teknologi MARA (UiTM), Malaysia (2023)
	Badioze Zaman Best Paper Award for the Article titled <i>Web-Based Mental Health Predicting System Using K-Nearest Neighbors and XGBoost Algorithms</i> . Authors: Nurul Farhanaa Zulkefli, Norizan Mat Diah, Azlan Ismail, Haslizatul Fairuz Mohamed Hanum, Zaidah Ibrahim, Yunifa Miftachul Arif (2023)
	Anugerah Perundingan Penerima Jumlah Wang Perundingan Terbanyak, Kolej Pengajian Kejuruteraan, Universiti Teknologi MARA (UiTM), Malaysia. Project Team: Nofri Yenita Dahlan (K), Zuhaila Mat Yasin, Mohd Fuad Abdul Latip, Azlan Ismail, Azlin Mohd Azmi, Mohd Najib Mohd Hussain, Siti Zaliha Mohammad Noor, NurFadzilah Ahmad (2022)
	Anugerah Penerbitan Jurnal Berimpak Tinggi (Harapan) FSKM, UiTM (2021)
	Excellent LNPT (96% and above) (2019)
	Postdoctoral Scholarship Award from Ministry of Higher Education, Malaysia and Universiti Teknologi MARA (UiTM), Malaysia (2015-2017)
	PhD Scholarship Award from Ministry of Higher Education, Malaysia and Universiti Teknologi MARA (UiTM), Malaysia (2008-2011)
	Excellent Service Award from Universiti Teknologi MARA (UiTM), Malaysia (2005)

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Outstanding Effort in Writing 'ICT Kini' (Latest ICT) (2005)

Innovation  
Awards

**Gold Awards**

Invention, Innovation & Design Exposition, iidex 2023, for the project, *DRL-EnergySim: DRL-based Energy-driven Cloud Scaling Simulator*. Team: Azlan Ismail (L), Siti Nuraishah Agos Jawaddi, Muhammad Hamizan Johari, Faris Haziq Sazali, Mohd Suffian Sulaiman.

KPPIM Innovation Talent 2023, for the project, *DRL-based Energy-driven Cloud Scaling Simulator*. Team: Azlan Ismail (L), Siti Nuraishah Agos Jawaddi, Muhammad Hamizan Johari, Faris Haziq Sazali.

**Silver Awards**

Invention, Innovation & Design Exposition, iidex 2023, for the project, *Code Cody: A Game-based Learning Platform for Programming Education*. Team: Mohd Suffian bin Sulaiman (L), Muhammad Haziq Ikhwan Jamaludin, Azlan Ismail.

Virtual Innovation Competition, 2023, for the project, *Extract-Transform-Load (ETL) Stream Framework for Twitter-based Sentiment Analysis*. Team: Faris Haziq Sazali (L), Azlan Ismail, Siti Nuraishah Agos Jawaddi.

COVID-19 International Innovation Awards, Malaysia Technology Expo (MTE) Special Edition, 2020, for the project, *Learning Bytes Access Dashboard: Infrastructure Analytics for Learning Accessibility Management*. Team: Haryani Haron (L), Azlan Ismail, Yusof Darus, Muhammad Azizi Mohd Ariffin, Sharifah Aliman, Nasiroh Omar, Sofianita Mutalib, Norjansalika Janom, Mohamad Kamal Harun.

**Top 10 Finalist**

Inovasi Anak Selangor Finalist, Selangor R&D and Innovation Expo, SRIE 2024, for the project, *XTB-Vision: AI-powered Tuberculosis Detection, Explainability and Monitoring*. Team: Azlan Ismail (L), Sofinaita Mutalib, Mohd Suffian Sulaiman, Shahrull Fytri Salim, Azalina Aziz

## RESEARCH GRANTS

National

**Principal-Researcher** for a project titled, *Dynamic Formation Method of Autonomous, Distributed, and Uncertain Behavior Software Components*. Funded by the Ministry of Education Malaysia (MOE) under the Fundamental Research Grant Scheme (FRGS, 2019 - 2022)

**Principal-Researcher** for a project titled, *Robust Multi-layer Planning Model for a Self-Adaptive Service-based Framework*. Funded by the Ministry of Higher Education (MOHE) under the Fundamental Research Grant Scheme (FRGS, 2013 - 2016)

**Co-Researcher** for a project titled, *Formulation of Optimized Soil DNA Sequence Alignment Algorithms for Environmental DNA (EDNA) Metabarcoding in Precision Agriculture Ecosystem*. Funded by the Ministry of Higher Education (MOHE) under the Fundamental Research Grant Scheme (FRGS, 2021 - 2024)



	<p><b>Co-Researcher</b> for a project titled, <i>Humanoid Robot Epigenetic Autism Therapeutic Architecture</i>. Funded by the Ministry of Higher Education (MOHE) under the National Research Grant Scheme (NRGS, 2013 - 2018)</p>
University	<p><b>Principal-Researcher</b> for a project titled, <i>Designing Coordinated Multiple Software Controllers for Energy-aware Cloud Services</i>. Funded by the Universiti Teknologi MARA (BESTARI PERDANA, 2018 - 2019)</p> <p><b>Principal-Researcher</b> for a project titled, <i>Modelling Automated Data Manipulation and Recoding Management for Improving Internal Exam Operation</i>. Funded by the Universiti Teknologi MARA (IRDC, 2005 - 2006)</p> <p><b>Co-Researcher</b> for a project titled, <i>Data Interpretation Metamodel for Evaluating the Quality of Data Sets</i>. Funded by the Universiti Teknologi MARA (REI, 2019 - 2022)</p> <p><b>Co-Researcher</b> for a project titled, <i>Advance Computing and Communication Research Assessment Driven</i>. Funded by the Universiti Teknologi MARA (LESTARI, 2019 - 2020)</p> <p><b>Co-Researcher</b> for a project titled, <i>Pembangunan Sistem IPRO2U untuk Program Transformasi UiTM</i>. Funded by the Universiti Teknologi MARA (LESTARI, 2018 - 2020)</p> <p><b>Co-Researcher</b> for a project titled, <i>Pendekatan Kreatif Meningkatkan Visibiliti dan Kolaborasi ACC</i>. Funded by the Universiti Teknologi MARA (LESTARI, 2018 - 2020)</p> <p><b>Co-Researcher</b> for a project titled, <i>Ketampakan Akademik - 5th International Conference on Science and Social Research</i>. Funded by the Universiti Teknologi MARA (LESTARI, 2018 - 2019)</p>
Industry / Private	<p><b>Principal-Researcher</b> for a project titled, <i>Unlocking Insights of Seafine Hindcast Data using Visualization and Simulation Techniques</i>. Funded by the Institute of Technology PETRONAS Sdn. Bhd., 32610, Bandar Seri Iskandar, Perak, Malaysia (May 2023 - Jun 2024)</p> <p><b>Co-Researcher</b> for a project titled, <i>A Prototype for Intelligent Data Driven Predictive Maintenance System</i>. Funded by the Institute of Technology PETRONAS Sdn. Bhd., 32610, Bandar Seri Iskandar, Perak, Malaysia (Nov 2021 - Sep 2022)</p>

## CONSULTANCY

Trainer	<p><b>Data Engineering &amp; Supervised Learning using Python</b> for the Participants of SCDS2021 Pre-Conference Virtual Workshop (18/10/2021)</p> <p><b>Microsoft Power BI Training</b> for Technology Depository Agency Berhad (04/10/2021 - 05/10/2021)</p>
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## PUBLICATIONS

### Journals

**Ismail, A.**, Sazali, F. H., Jawaddi, S. N. A., & Mutalib, S. (2025). Stream ETL framework for twitter-based sentiment analysis: Leveraging big data technologies. *Expert Systems with Applications*, 261, 125523.

<https://doi.org/10.1016/j.eswa.2024.125523>

Agos Jawaddi, S. N., **Ismail, A.**, Sulaiman, M. S., & Cardellini, V. (2025). Analyzing Energy-Efficient and Kubernetes-Based Autoscaling of Microservices Using Probabilistic Model Checking. *Journal of Grid Computing*, 23(1), 3.

<https://doi.org/10.1007/s10723-024-09789-9>

Shafian, S., Mohd Salehin, F. N., Lee, S., **Ismail, A.**, Mohamed Shuhidan, S., Xie, L., & Kim, K. (2025). Development of Organic Semiconductor Materials for Organic Solar Cells via the Integration of Computational Quantum Chemistry and AI-Powered Machine Learning. *ACS Applied Energy Materials*.

<https://doi.org/10.1021/acsaem.4c02937>

Xu, Z., Liao, Z., Xiao, X., Ahmad, S., Diah, N. M., & **Ismail, A.** (2025). Target image detection algorithm of complex road scene based on improved multi-scale adaptive feature fusion technology. *International Journal for Simulation and Multidisciplinary Design Optimization*, 16, 6.

<https://doi.org/10.1051/smdo/2025004>

Hou, H., & **Ismail, A.** (2024). EETS: An energy-efficient task scheduler in cloud computing based on improved DQN algorithm. *Journal of King Saud University-Computer and Information Sciences*, 36(8), 102177.

<https://doi.org/10.1016/j.jksuci.2024.102177>

Liao, Z., Xu, X., Xu, Z., & **Ismail, A.** (2024). Discriminative learning of online appearance modeling methods for visual tracking. *Journal of Optics*, 53(2), 1129-1136.

<https://doi.org/10.1007/s12596-023-01293-9>

A. Johari, and **A. Ismail**. 2024. "PMLAP: a methodology for annotating SSML elements into HTML5." *The Journal of Supercomputing* 80 (4): 5675-5707.

<https://doi.org/10.1007/s11227-023-05673-7>

SN. Agos Jawaddi, **A. Ismail**, MNH. Mohammad Hatta, and AF. Kamarulzaman. 2024. "Insights into cloud autoscaling: a unique perspective through MDP and DTMC formal models." *The Journal of Supercomputing* 80 (4): 5073-5107.

<https://doi.org/10.1007/s11227-023-05665-7>

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HH. Hou, SN. Agos Jawaddi, and **A. Ismail**. 2024. "Energy efficient task scheduling based on deep reinforcement learning in cloud environment: A specialized review." *Future Generation Computer Systems* 151: 214-231.

<https://doi.org/10.1016/j.future.2023.10.002>

SN. Agos Jawaddi and **A. Ismail**. 2024. "Integrating OpenAI Gym and CloudSim Plus: A simulation environment for DRL Agent training in energy-driven cloud scaling." *Simulation Modelling Practice and Theory* 130): 102858.

<https://doi.org/10.1016/j.simpat.2023.102858>

SN. Agos Jawaddi, **A. Ismail**, and S. Shafian. "Enhancing energy efficiency in cloud scaling: A DRL-based approach incorporating cooling power." *Sustainable Energy Technologies and Assessments* 60 (2023): 103508.

<https://doi.org/10.1016/j.seta.2023.103508>

Y. Bee Wah, **A. Ismail**, N. Azid, NNN. Azid, J. Jaafar, I. Abdul Aziz, MH. Hasan, and J. Mohamad Zain. "Machine Learning and Synthetic Minority Oversampling Techniques for Imbalanced Data: Improving Machine Failure Prediction." *Computers, Materials & Continua* 75, no. 3 (2023).

<https://doi.org/10.32604/cmc.2023.034470>

L. ZhongMing, X. Xiuhong, X. Zhaosheng, **A. Ismail**. 2023. "Discriminative Learning of Online Appearance Modeling Methods for Visual Tracking." *Journal of Optics*: 1–8. <https://doi.org/10.1007/s12596-023-01293-9>

L. ZhongMing, **A. Ismail**. 2023. "Performance of Correlational Filtering and Deep Learning Based Single Target Tracking Algorithms." *Journal of Smart Science and Technology* 3(1): 63–79. <https://doi.org/10.24191/jsst.v3i1.42>

**A. Ismail**, S. Mutalib, and H. Haron. 2023. "Data Science Technology Course: The Design, Assessment and Computing Environment Perspectives." *Education and Information Technologies*, January, 1–26.

<https://doi.org/10.1007/s10639-022-11558-8>

S.N.A. Jawaddi, M.H. Johari, and **A. Ismail**. 2022. "A Review of Microservices Autoscaling with Formal Verification Perspective." *Software: Practice & Experience* 52 (11): 2476–95. <https://doi.org/10.1002/spe.3135>

T.A.T. Nazmi, **A. Ismail**, and J. Shen. 2022. "Cloud Failure Prediction Based on Traditional Machine Learning and Deep Learning." *Journal of Cloud Computing* 11 (1): 1–19. <https://doi.org/10.1186/s13677-022-00327-0>

S.N.A. Jawaddi, **A. Ismail**, and V. Cardellini. 2022. (Preprint) "Modeling and Verifying Microservice Autoscaling Using Probabilistic Model Checking."

<https://www.researchsquare.com/article/rs-1682990/v1>

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**A. Ismail.** 2020. "Energy-Driven Cloud Simulation: Existing Surveys, Simulation Supports, Impacts and Challenges." *Cluster Computing*, February, 1–17. (Indexed in JCR Q1/Q2) <https://doi.org/10.1007/s10586-020-03068-4>

**A. Ismail**, S. Intu, and S. Zambri. 2020. "A GUI-Driven Prototype for Synthesizing Self-Adaptation Decision." *Bulletin of Electrical Engineering and Informatics* 9 (2): 792–800. (Indexed by SCOPUS)

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## SYSTEM DEVELOPMENT PROJECT

i-PRO2u	<p><b>Internal Grant Proposal System</b> <a href="https://ipro2u.uitm.edu.my/">https://ipro2u.uitm.edu.my/</a></p> <p><i>Purpose:</i> To support the online drafting, submission and collection of internal grants by UiTM researchers.</p> <p><i>Team members:</i> Assoc. Prof. Dr. Sharifah Aminah Syed Mohamad, Assoc. Prof. Dr. Ahmad Farid Abidin, Dr. Rafeah Legino, Mohd Alif Basar</p>
IEAD	<p><b>Interactive Executive Academic Dashboard</b></p> <p><i>Purpose:</i> To provide an executive dashboard to allow exploration of the pattern of UiTM student's residency area in relation to different factors.</p> <p><i>Team members:</i> Assoc. Prof. Dr. Nasiroh Omar, Assoc. Prof. Dr. Norjansalika Janom, Dr. Sharifah Aliman, Dr. Sofianita Mutalib</p>

## RESEARCH PROJECT SUPERVISION

### PhD Projects

- Hou Huanhuan. *Energy Efficient Workflow Scheduling based on DRL in Kubernetes Environment*. (2022 - Ongoing)
- Nur Diana Madinah Ab Hadi. *Model Transformation for Enabling Model Checking in Collective Adaptive Systems* (2019 - Ongoing)
- Liao ZhongMing. *Visual Object Tracking Algorithm Based on Deep Learning*. (Sep 2021 - Mac 2025, Completed)
- Muhammad Firdaus Mustapha. *Improving Parallel Self-Organizing MAP using Heterogeneous System Architecture* (Completed, 2018)

### Master-by-Research Projects

- Siti Nuraishah Agos Jawaddi. *Formal Verification for Microservice Autoscaling* (Completed, 2023)
- Muhammad Hamizan Johari. *Formation Synthesis for Ensembling Collective Adaptive Systems* (Completed, 2023)
- Ahmad Izzuddin Yusof. *Decentralized Coordination During Planning and Execution Phase of MAPE-K for Autonomic Cloud Computing* (Completed, 2018)

## FINAL YEAR PROJECT SUPERVISION

### Postgraduate Projects

- Nur Fatihah Binti Nazri, *Experimental Evaluation Of Deep Reinforcement Learning Algorithms With Multiple Datasets For Malicious Url Detection*. (Ongoing Data Science Project, 2024)
- Nur Atiqah Abu Abbas, *Experimental Evaluation Of Deep Reinforcement Learning Algorithms For Intrusion Detection System In Apache Spark Platform*. (Ongoing Data Science Project, 2024)
- Nurul Ain Nabilah Mohd Isa, *Optimising a Deep Reinforcement Learning Customer Service Chatbot*. (Completed Data Science Project, 2023)
- Muhamad Luqman Shamsuddin, *Job Failure Prediction in Cloud using Imbalanced Dataset Handling Techniques*. (Completed Data Science Project, 2021)
- 'Akasyah Sidik. *Dashboard of Data Quality Assessment using Python Framework*. (Completed Web Project, 2021)
- Azad Johari, *Embedding Foreign Markup Language Data in HTML Attributes*. (Completed Web Project, 2021)
- Bob Jalius, *Dashboard of Data Quality Assessment*. (Completed Web Project, 2021)
- Nur Naelah 'Ariefah Nordin, *Developing an Executive Dashboard to Visualize University Performance*. (Completed Data Science Project, 2021)
- Asmawati Selamat, *Batik Motifs Classification using Multi-texton Histogram and Machine Learning*. (Completed Data Science Project, 2020)
- Nurul Shafiqah Zainuri, *Jobs Failure Prediction using Google Workload Traces*. (Completed Data Science Project, 2019)
- Mohd Taufik Rahmat, *Application of Faster RCNN for Chest X-ray Image Classification Approaches*. (Completed Data Science Project, 2018)
- Muhammad Bazil bin Dahamad, *A Review of MAPE-K Driven DEUS Application*. (Completed Special Topic, 2017)
- Mohd Faiz Bin Jamaludin, *An Implementation of Hybrid Parallel Programming Model to Improve the Performance of a Reporting Application*. (Completed Special Topic, 2017)
- Nur Azreen Yahya, *Ontology-based Search Prototype of Healthy Food Recipe Blogs for Diabetic Patients*. (Completed Special Topic, 2013)
- Ahmad Azizul Dagang, *Assessing Communication of Master-Slave Control Model for Cross-layer Service-based System*. (Completed Special Topic, 2013)
- Imran Hazimin Othman, *Framework for Developing Flash-based Database-driven Websites*. (Completed Computing Project, 2006)



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- Alfatzee Hj Bolot, *Analysis on the Implementation of Source Code Collaboration in Academic Environment*. (Completed Computing Project, 2005)

### Undergraduate Projects

- Shahrull Fytri Salim, *Automated Chest X-ray Image Classification to Detect Tuberculosis*. (Completed Computing Project, 2024)
- Clement Maxwell Anak Charles Maclean, *A Cloud Scheduling Simulator to Train Deep Reinforcement Learning Algorithm using OpenAI Gym*. (Completed Computing Project, 2023)
- Amrina Roshada Zaidi, *Developing Software Conversion Module from Trait-based Model to Formal Model using ATL Tool*. (Completed Computing Project, 2023)
- Faris Haziq Sazali, *Developing Extract-Transform-Load (ETL) and Visualization Method for Streaming Data Analytics in Big Data Platforms*. (Completed Computing Project, 2022)
- Tengku Nazmi Tengku Asmawi, *Evaluation of Cloud Failure Prediction Models using Traditional Machine Learning and Deep Learning with Google Cluster Traces*. (Completed Computing Project, 2022)
- Anis Faqihah Binti Kamarulzaman, *Performance Modelling and Verification of Cloud-Based Auto-Scaling Policies*. (Completed Computing Project, 2022)
- Muhammad Nur Haziq Mohammad Hatta, *Modelling and Verification of Horizontal Scaling Decision using Probabilistic Model Checking*. (Completed Computing Project, 2022)
- Nurul Afrina Che Roni, *Visual Analytics Dashboard for Predictive Models Using DALEX*. (Completed Computing Project, 2022)
- Siti Maryam Umairah Zainol, *Modelling and Evaluating Agent Based Cloud Scaling Policy Using Asynchronous Advantage Actor Critic*. (Completed Computing Project, 2022)
- Muhammad Khairul Azzim Long Ahmad Adli, *Simulation of Energy-driven Cloud Scaling System using Imagination Augmented Actor and CloudSimPlus*. (Completed Computing Project, 2021)
- Muhammad Saqif Badlishah, *Comparison of Reinforcement Learning Techniques for Performance Driven Cloud Scaling System*. (Completed Computing Project, 2021)
- Azalea Mohamed Shuhaimi, *Data Accuracy Measurement System using Machine Learning*. (Completed Computing Project, 2021)
- Azfar Azhar, *Research-Interests-Group Membership System using MVC-based Framework*. (Completed Computing Project, 2019)
- Susanti Intu, *Computer-Aided Performance Evaluation of Strategy Synthesis*. (Completed Computing Project, 2017)
- Nur Syazleen Rosli, *A conversion program from WS-Agreement to probabilistic temporal logic specification*. (Completed Computing Project, 2017)
- Nurul Fatahiyah Azmilumur, *Development of Food Recipe Blog Recommendation System for Diabetes (DIA-RECIPE)*. (Completed Computing Project, 2014)
- Ambree Haqim Abu Talip, *Semi-automated Negotiation System for Supporting Lecturer Invigilation Scheduling*. (Completed Computing Project, 2013)
- Abdul Rahman Abdul Kadir, *Semi-automated Coordination of Final Year Project Management System based on BPEL Framework*. (Completed Computing Project, 2013)
- Mohd Shahrizan Mohd Sa'at, *Enhancement of Data Retrieval Performance for i-Learn Web Analytic System*. (Completed Computing Project, 2007)



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- Mohd Sahli Nordin, *System Architecture Development of Programming Languages Source Code Digital Library for FTMSK*. (Completed Computing Project, 2005)
  - Mohd Rosli Ab Sukor, *A Study of myFTMSK Web Portal Visitor Behavior using Visitor Tracking System*. (Completed Computing Project, 2005)
  - Mohd Hafzam Mohd Zin, *Code Commentation and Code Documentation Practices for FTMSK's Web Portal*. (Completed Computing Project, 2005)