



ANNUAL REPORT

School of Computer Sciences

Universiti Sains Malaysia

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Editorial team

ADVISOR

Prof. Dato' Dr. Bahari Belaton

EDITOR

Dr. Siti Hazyanti Mohd Hashim

ASSOCIATE EDITORS

Dr. Nur Hana Samsudin

Dr. Vaithegy Doraisamy

Dr. Lim Chia Yean

Dr. Nibras Abdullah Ahmed Faqera

About School



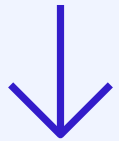
Vision:

Towards holistic and sustainability-inspired computing for a better tomorrow.

Mission:

Providing holistic and sustainability-inspired computing in the quest for knowledge and excellence in education and research that nurtures individuals who can contribute effectively towards the transformation of the nation.

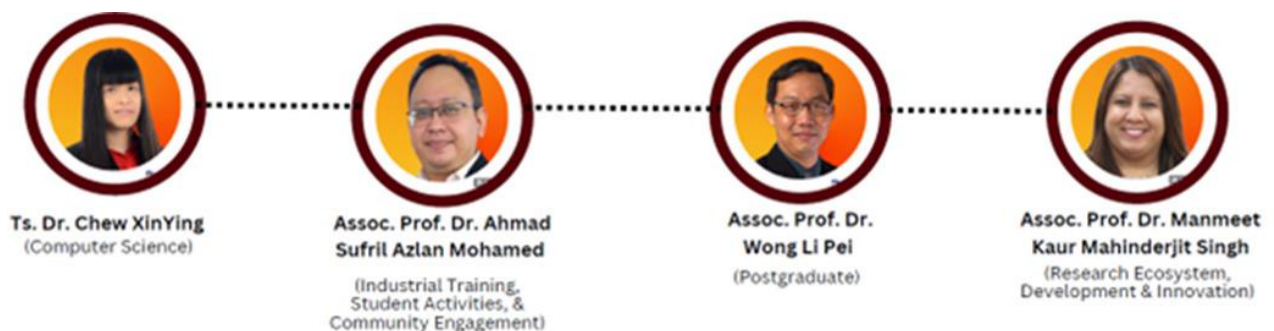
Management Team



Upper management team



Programme Managers



Program Coordinators for Postgraduate Study



Program Coordinators for Postgraduate Study



Program Coordinators for Postgraduate Study



Technical Support Lead



Academic Staff

No.				
1.	Ahmad Sufriil Azlan Mohamed Associate Professor	B IT (Hons), Multimedia Technology. MSc, Computing Science. PhD	Multimedia University University of Manchester, UK University of Salford, UK	Image Processing, Computer Vision
2.	Aman Jantan Associate Professor	BSc, Computer Science. MSc, Computer Sciences. PhD.	USM USM USM	Computer & Network Security, Cybersecurity
3	Anusha Achuthan Senior Lecturer	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM USM	Computer Vision, Image Processing, Medical Image Analysis
4	Azizul Rahman Mohd Shariff Senior Lecturer	BEng (Hons), Electrical & Electronics. MSc, Personal, Mobile & Satellite Communications. PhD.	University of Plymouth, UK University of Bradford, UK University of Bradford, UK	Mobile & Cellular Networks, Vehicular Networking
5.	Azleena Mohd Kassim, Senior Lecturer	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM USM	Knowledge Engineering & Management, Artificial Intelligence, Metaheuristics Algorithm, Evolutionary Computing, Health Informatics, Group/Coalition Formation

6.	Azman Ab Malik, Senior Lecturer	B Tech (Hons), Electric & Electronics. MSc, Electrical & Electronics Engineering. PhD.	UNIKL USM UITM	Internet of Things, Embedded System, Microcontroller, Machine Learning, Artificial Intelligent, Robotic
7.	Bahari Belaton Professor	B App Sc, Computer Science. B Sc (Hons), Computer Science. PhD.	South Australia Institute of Business & Technology (SAIT) Flinders University South Australia University of Leeds, UK	Scientific Data Visualization, Computer Graphics, Network Security
8	Chan Huah Yong Associate Professor	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM University of Franch-Comté, France	Parallel & Distributed Processing, Grid Computing
9	Cheah Yu-N Associate Professor	PhD, Communications Networks, 2007	USM USM	Knowledge Management, Intelligent Systems, Health Informatics
10.	Chew XinYing Senior Lecturer	B IT (Hons) ,Information Technology. PhD.	UKM USM	Natural Language Processing, Data Mining
11.	Fadratul Hafinaz Hassan Senior Lecturer	BSc (Hons), Interior Design. MSc, Information Technology. PhD.	USM USM Brunel University London, UK	Optimization, Heuristic Search, Evolutionary Algorithm
12.	Gan Keng Hoon Associate Professor	BSc (Hons), Information Technology. MSc, Computer Science. PhD.	UKM USM UM	Information Retrieval, Semantic Web Search, Query Optimization

13.	G.C. Sodhy Senior Lecturer	BSc (Hons), Computer Science. MSc, Computer Science.	USM USM	IParallel & Distributed Processing, Grid Computing
14.	Jasy Liew Suet Yan Senior Lecturer	Diploma, Computer Science (Information Technology). BSc (Hons), Computer Science. MSc, Information Management. PhD, Information Science.	UTM USM Syracuse University, USA Syracuse University, USA	Sentiment & Text Analysis, Natural Language Processing, Machine Learning
15.	Lim Chia Yean Senior Lecturer	BSc (Hons), Computer Science. MBA, Software Engineering. PhD	USM INTI COLLEGE USM	Contextualization (Knowledge Acquisition), Customer lifetime value, Data Analytics, E-Commerce UX Design
16.	Manmeet Kaur Mahinderjit Singh Associate Professor	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM University of Queensland, Australia	Data Security, Security & Privacy
17.	Mohammad Ali Sarvghadi Senior Lecturer	BSc in Computer Hardware. MSc, Computer Science. PhD	Khayyam University, Iran USM USM	Wireless Sensor Network MAC protocols, Internet of Things, Routing in LEO Satellite Constellations
18.	Mohd Adib Omar Senior Lecturer	BSc, Computer Science. MSc, Computer Science. PhD.	American University, Washington DC, USA USM USM	Collaborative Computing, Distributed Computing

19.	Mohd. Azam Osman Associate Professor	BSc (HONS), Computer Science. MSc, Computer Science	USM USM	Distributed Shared Memory Systems, Multicore Programming
20.	Mohd Halim Mohd Noor Senior Lecturer	BEng, Computer & Information Engineering. MSc., Electrical & Electronic Engineering. PhD.	UIAM USM University Of Auckland, New Zealand	Machine learning and deep learning for computer vision and pervasive computing
21.	Mohd Heikal Husin Senior Lecturer	BA (Hons), Multimedia Computing. Master of E-Commerce. PhD.	Coventry University, UK University of South Australia, Australia University of South Australia, Australia	Government 4.0, Policy Development, Enterprise 4.0
22.	Mohd Nadhir Ab Wahab Senior Lecturer	BEng (Hons), Mechatronics Engineering. MSc, Mechatronics Engineering. PhD.	UNIMAP UNIMAP University Of Salford, UK	Computer Vision, Deep Learning, Machine Learning, Meta-heuristics, Mobile Robotics, Swarm Intelligence, Path Planning, IoT
23.	Mohd Najwadi Yusoff Senior Lecturer	B. Tech (Hons) ICT. MSc, Computer Science. PhD.	UTP USM UPM	Digital Forensic, Cybersecurity, Blockchain
24.	Nasuha Lee Abdullah Senior Lecturer	B Eng, Computer Engineering. MSc Informatic. PhD (Doctor of Engineering), 2015	UPM USM UTM	Information Systems/IT, Technopreneurship, Engineering Business Management, Quality Management

25.	Nibras Abdullah Ahmed Faqera Senior Lecturer	BSc, Computer Science. MSc, Computer Science. PhD.	University of Science and Technology, Hadhramout, Yemen USM USM	Computer Networks, Wireless Networks, Optimization, Internet Of Things (IoT), Artificial Intelligence, Cyber Security
26.	Noor Farizah Ibrahim Senior Lecturer	B Tech (Hons), Information Technology. MSc, Information Management. PhD.	UTP UiTM University Of Bristol, UK	Data/Text Analytics, Data Mining, Machine Learning, and Social Media Research
27.	Nor Athiyah Abdullah Senior Lecturer	B IT (Hons), Software Engineering. MSc, Computer Science. PhD.	UMT USM Iwate University, Japan	Social Media, Human-Computer Interaction
28.	Nur Hana Samsudin Senior Lecturer	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM University of Birmingham, UK	Natural Language Processing, Speech Processing
29.	Nur Intan Raihana Ruhaiyem Senior Lecturer	BMM (Hons), Multimedia. MSc, Computer Science. PhD.	UUM USM University Of Queensland Australia	Image Analysis, Computer Vision
30.	Nursakirah Binti Ab Rahman Muton Senior Lecturer	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM UUM	Information Systems

31.	Nurul Hashimah Ahamed Hassain Malim Associate Professor	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	USM USM The University of Sheffield, UK	Cheminformatics, Bioinformatics, Data Mining
32.	Putra Sumari Professor	BSc (Hons.), Computer Science. MSc, Computer Science. PhD.	USM Liverpool University, UK Liverpool John Moores University, England	Distributed Multimedia & Communication
33.	Siti Hazyanti Binti Mohd Hashim Senior Lecturer	BSc (Hons), Multimedia Computing. Msc, Computer Science. PhD.	UiTM UiTM UiTM	Multimedia , Game Technology, Virtual reality
34.	Sukumar Lecthmunan Senior Lecturer	BSc (Hons) Computer Science. MSc, Computer Science. PhD.	UPM UPM University of Strathclyde, UK	Software Engineering, Software Metrics
35.	Suzi Iryanti Fadilah Senior Lecturer	BSc (Hons.), Computer Science. MSc, Computer Science. PhD.	UTeM UTeM USM	Wireless Networks, Vehicular Ad-Hoc Networks
36.	Syaheerah Lebai Lutfi Senior Lecturer	BSc (Hons), Information Computing. Master, Software Engineering. PhD.	Bolton Institute of Technology, England, UK UM Universidad Politécnica De Madrid, Spain	Human Computer Interaction (HCI), Affective Computing

37.	Tan Tien Ping Associate Professor	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	UUSM USM Universite Joseph Fourier, University, France	Automatic Speech Recognition, Natural Language Processing
38.	Umi Kalsom Yusof Associate Professor	BSc (Comp), Information Science. MSc, Information Technology. PhD.	Western Illinois University, Illinois, US USM UTM	Artificial Intelligence, Evolutionary Algorithms, Machine Learning, Database Design and Management, Web Engineering and Technologies
39.	Vaithegy A/P Doraisamy Senior Lecturer	BSc, Computer Science. Msc, Computer Science. PhD.	UTM USM USM	Computer Networking, Mobile Computing, Internet Of Things (IoT), Cyber Security, Artificial Intelligence, Data Centre Networking, Cloud Computing
40.	Wan Mohd Nazmee Wan Zainon Associate Professor	BSc (Hons)., Computer Science. MSc, Computer Science. PhD.	USM USM USM	Information Visualization, Multimedia Information Retrieval
41.	Wong Li Pei Associate Professor	BSc (Hons)., Computer Science. MSc, Computer Science. PhD.	USM USM Nanyang Technological University, Singapore	Operations Research, Scheduling and Timetabling

42.	Zarul Fitri Zaaba Senior Lecturer	BA (Hons.) IT. MSc, Computer Information Security. PhD, Data Security, 2014	UUM Royal Holloway University London,UK University Of Plymouth, UK	Information Security, Security & Usability
43.	Zurinahni Zainol Associate Professor	BSc (Hons), Computer Science. MSc, Computer Science. PhD.	UKM USM University Of Hull, UK	Database Theory & Formal Specification

Administrative & Technical Staff

No.	Name	Position
1	AhAbdul Rohim Bin Mansur	B Assistant Engineer
2	Amran Bin Abd Samad	Information Technology Officer
3	Arief Ramadhan Bin Juswa	Clerk
4	Badriyah Binti Che May	Assistant Engineer
5	Halizah Binti Abdul Razak	Secretary
6	Hilridzuan Bin Romli	Operation Assistant
7	Izam Fairus Bin Kamaruddin	Administrative Officer
8	Jasmi Bin Chek Isa	Assistant Engineer
9	Juliana Binti Abdul Aziz	Secretary
10	Mahfuzah Binti Othman	Administrative Officer
11	Mohamad Tarmizi Bin Hat	Assistant Engineer
12	Mohd Hidzir Bin Shamsul Bahrin	Assistant Information Technology Officer
13	Mohd Saidi Bin Mat Nor	Assistant Engineer
14	Muhamad Hadzri Bin Yaakop	Operation Assistant
15	Nor Azman Bin Shahiran	Information Technology Officer
16	Nor Baizura Binti Abdullah	Assistant Information Technology Officer
17	Nur Fatin Amera Binti Che Zaki	Assistant Administrative Officer
18	Nur Syazwani Binti Mohd Shariff	Clerk
19	Nurul Nadiah Binti Zambri	Clerk
20	Rehnuga A/P Jagatheesan	Clerk
21	Ruslan Bin Ahmad	Assistant Engineer
22	Sheela A/P Muniandy	Clerk
23	Shik Abdulla Bin Mohamed Ali	Assistant Engineer

Academic Programmes

Computer science at USM started with course in programming in 1974. It has since developed into a specialization in Computer Science under the Bachelor of science (Mathematics) honours degree, and eventually the Bachelor of Science (Computer Science) (B.Sc. (Comp.Sc)) degree with honours was offered.

The School of Computer Sciences was the first school in USM to offer a collaborative programme with private colleges at the diploma level since 1995 and also the first to offer the USM external degree programme in 1997.

One of the key factors contributing to this success is its robust curriculum, which strives to strike a balance between theoretical instruction computing and practical exposure.



Deans List Award



BSc Computer Sciences

The Bachelor of Science (Computer Science) degree is a 4-year degree programme that encompasses all aspects of computing as a discipline. The general educational goal of the programme is to produce high-quality graduates with the necessary professional skills to practice as successful computing professionals and compete effectively in a world of rapid technological change. Hence, the programme covers theoretical and scientific foundations as well as various extensive applications in industry and commerce. The curriculum of the programme emphasises problem-based learning concepts particularly through practical/project/training-based courses that are integrated throughout the years and emphasises as well as inculcates a research orientation to the students.

- Intelligent Computing
- Computing Infrastructure
- Software Engineering

MASTER COMPUTER SCIENCES

MSc (Computer Science) Programme

The School of Computer Sciences offers three modes of study for the postgraduate programmes, that is Coursework, Mixed Mode and Research. For 2023 academic year, the school had enrolled 352 masters students and 253 phd students. Currently we offered four types of programmes:

- Mixed Mode Programme – Master of Science (Computer Science)
- Coursework Mode Programme – Master of Science (Data Science & Analytics)
- Coursework Mode Programme – Master of Science (Digital Transformation)
- Research Programme - Ph.D. & M.Sc. by Research

Mixed Mode Programme - Master of Science (Computer Science)

The program is to provide students with a solid foundation in the field of Computer Science and an understanding of innovative computer technologies. It helps students to relate various computer science disciplines, concepts and practices. It trains them to apply their knowledge and skills to fulfil the industry's needs. This program also prepares students the re- search skills and motivates them to pursue a doctoral programme.

Coursework Mode Programme - Master of Science (Data Science & Analytics)

The program aims to produce the workforce/human resources in the field of Big Data Analytics that can make decisions based on the availability of comprehensive data. This program provides students with a deep understanding of the core concepts, practice and tools in the domain of data science and analytics. It equips them with the knowledge and skills of collecting and integrating data, modelling and performing big data analysis so that they can be applied in the work across many domains/sectors. It trains them to achieve high competency in using big data analytical tools in a variety of industries.

Coursework Mode Programme – Master of Science (Informatics)

This program is to develop and produce graduates with an in depth understanding of theoretical and practical aspects of informatics and of their interrelationships. It equips graduates with knowledge and skill in scientific, engineering and advance analysis of ICT which can be applied in jobs across various fields/sectors especially in business, technopreneur- ship and biomedical sectors. It produces more ICT power users in various industrial fields such as bio-medical, healthcare, marketing, business and others.

Research Programme - PhD & MSc by Research

A research degree is awarded primarily based on a thesis embodying the results of a research project and any coursework topics (when necessary) or other formal studies required by the University and School of Computer Sciences to be undertaken during the candidature. The degree can be pursued under the supervision of at least one academic staff of the School. Under this mode of study, the candidate is required to complete a thesis within the stipulated time. Usually, full-time candidates for M.Sc. complete their theses in 12 – 18 months and for PhD. in 30 – 40 months.



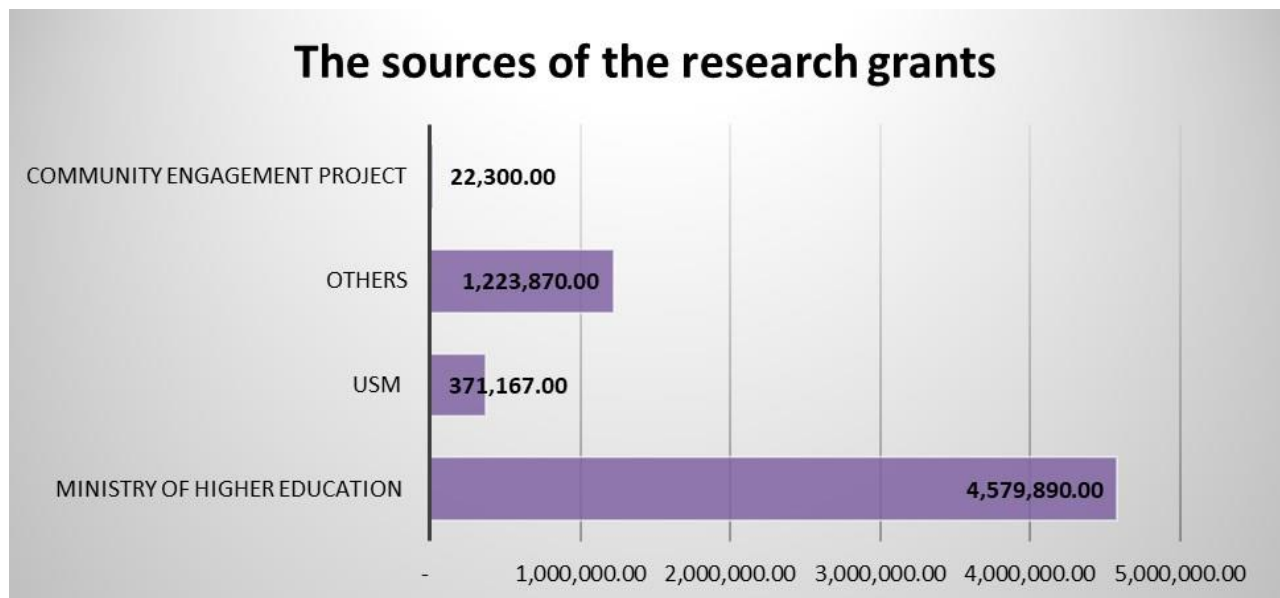
Research and Innovation

CS in research

The school is now in a leading position in research and development. The research and development of the school are supported by 3 research clusters. They are Enabling Technologies & Infrastructure (ETIC), Data to Knowledge (D2K), and Service Computing (SC). The research clusters allow cooperation among academics in research studies particular in multidis–ciplinary and transdisciplinary research.

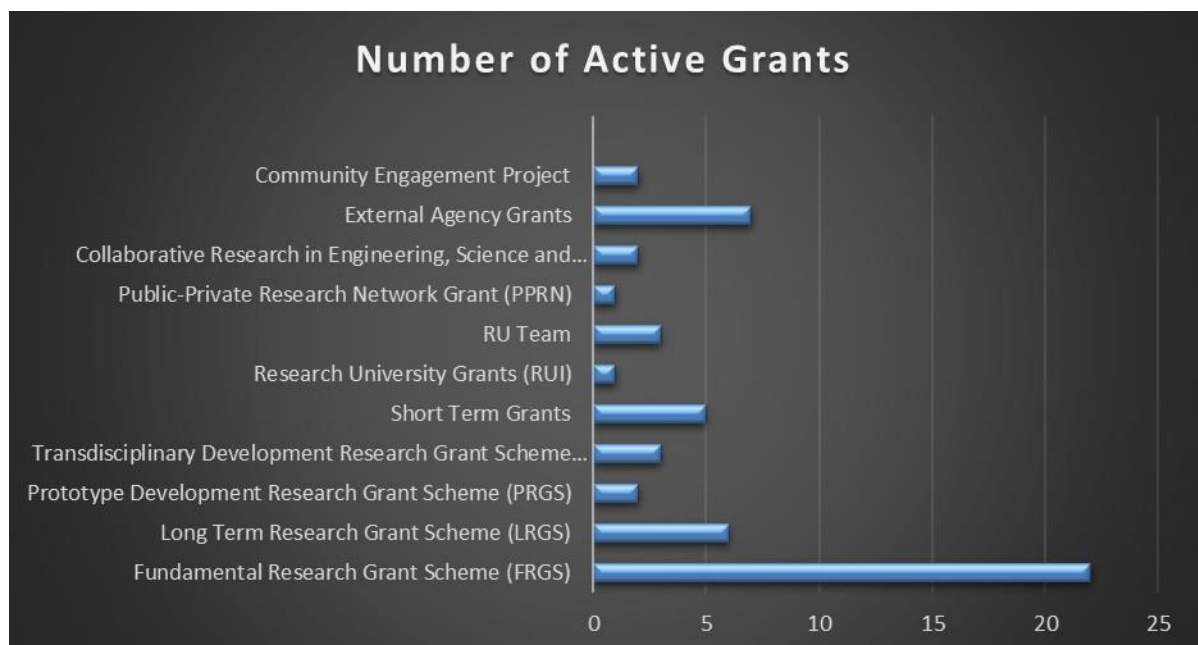
Research and innovation in School of Computer Sciences continue to strengthen in 2022. There are 54 active research grants in 2022. The sources of the research grants are USM, Ministry of Higher Education and industry. The grants from USM are Research University Grant (RU), short term grant and bridging grant while the Ministry of Higher Education offers Fundamental Research Grant Scheme (FRGS), Long Term Research Grant Scheme (LRGS) and Trans-disciplinary Research Grant Scheme (TRGS).

Financial research support



Statistical summary of the number of Active Grants

Jenis Geran	Jumlah Projek Yang Aktif
Skim Geran Penyelidikan Fundamental (FRGS)	14
Skim Geran Penyelidikan Jangka Panjang (LRGS)	0
Skim Geran Penyelidikan Pembangunan Prototaip (PRGS)	1
Skim Geran Penyelidikan Pembangunan Transdisiplinari (TRGS)	2
Geran Jangka Pendek	3
Geran Universiti Penyelidikan (RUI)	0
RU Team	4
Geran Jaringan Penyelidikan Awam-Swasta (PPRN)	0
Geran Collaborative Research in Engineering, Science and Technology (CREST)	1
Geran Agensi Luar	4
Projek Libatsama Komuniti	2
JUMLAH	31



Fundamental Research Grant Scheme (FRGS)

No.	Project Title	Project Leader	Period	Amount
1.	A Deep Neural Network Framework Using Fundamental Analysis and Market Sentiment Analysis for Modeling Market Bubble and Overheat	Dr. Tan Tien Ping	7 September 2021 – 6 Mac 2024	RM 59,000.00
2.	Advanced Persistent Threat Attacks Defender and Remediation model using behavioural based tactics, techniques and procedures (TTP) for Smartphone Environment	Prof. Madya Dr. Manmeet Kaur Mahinderjit Singh	1 November 2020 – 30 April 2024	RM 109,700.00
3.	Enhancing Path's Smoothness and Distance for a Mobile Robot by fusing Probabilistic Roadmap (PRM) and Cubic Bezier Curve	Dr. Mohd Nadhir Ab Wahab	1 November 2020 – 30 April 2024	RM 119,800.00
4.	Formulating a crime hotspot prediction model using enhanced density based clustering and auto regressive integrated moving averages techniques for improving prediction accuracy of resident burglary crime	Dr. Sukumar Letchmunan	1 November 2020 – 30 April 2024	RM 114,450.00
5.	Assessing the role of metaheuristic and machine learning approaches for transfer synchronisation in demand responsive transport	Prof. Madya Dr. Wong Li Pei	1 November 2020 – 30 April 2024	RM 94,000.00
6.	Efficient Joint Process Monitoring using a New Robust Variable Sample Size and Sampling Interval Run Sum Scheme	Ts. Dr. Chew XinYing	1 September 2022 – 31 Ogos 2025	RM92,750.00
7.	Formulation of convolutional neural network architecture to reduce spatial-layout and translation-invariant deficiency.	Profesor Dr. Putra Bin Sumari	1 September 2022 – 31 Ogos 2024	RM120,500.00
8.	Incorporating Domain and Informal Language Features towards Efficient Word Embeddings for English-Malay Code-Switching Opinionated Text	Prof. Madya Dr. Gan Keng Hoon	1 September 2022 – 31 Ogos 2024	RM68,100.00

9.	Privacy Model: Fine-grained Components Identification for Privacy Policy Compliance under Malaysian Personal Data Protection Act 2010 (PDPA) using Machine Learning	Dr. Zarul Fitri Bin Zaaba	1 Oktober 2023 –30 September 2026	RM105,600.00
10.	Optimal Hate Speech Meta-classification for Cyber-Hate Detection Based on Enhanced Machine Learning Heterogeneous Stacked Ensembles (HSE) Algorithm	Prof. Madya Dr. Wan Mohd Nazmee Bin Wan Zainon	1 Oktober 2023 –30 September 2026	RM118,050.00
11.	Enhancing Classification of Cyberbullying by Leveraging Bystander Features using the New Bystander-BERT Model	Dr. Syaheerah Binti Lebai Lutfi	1 Oktober 2023 –30 September 2025	RM80,500.00
12.	Hierarchical Classification of Systemic Lupus Erythematosus (SLE) using hybrid Machine Learning Model for National Registry	Dr. Nur Hana Binti Samsudin	1 Oktober 2023 –30 September 2026	RM146,100.00
13.	Formulation of Self-Attention and Boundary-aware Modules for Deep Learning Medical Image Segmentation	Dr. Mohd Halim Bin Mohd Noor	1 Oktober 2023 –30 September 2026	RM147,000.00
14.	Formulation of a Filter-Wrapper and Grey Wolf Optimization Approach for Feature Selection and Ranking in Multi-Class Text Classification	Prof. Madya Dr. Cheah Yu-N	1 Oktober 2023 –30 September 2025	RM89,400.00

Prototype Development Research Grant Scheme (PRGS)

No.	Project title	Project Leader	Period	Amount
1.	Development of a Smart SpatialSimulation System for Congestion Detection (S4- CD)	Dr. Fadratul Hafinaz Hassan	2 Ogos 2021 – 1 Februari 2024	RM 87,500.00

Transdisciplinary Development Research Grant Scheme (TRGS)

No.	Project Title	Project Leader	Period	Amount
1.	A Two-Pronged Approach In Drawing The Connection Between Cyberbullying And Suicide Among Adolescents In Malaysia	Dr. Jasy Liew Suet Yan	1 December 2020 – 30 November 2024	RM 189,506.00
2.	Prediction of Multi-Hazards using Machine Learning and Route Management Optimization for Disaster Management using Hybridised Evolutionary Algorithm	Dr. Azleena Mohd Kassim	1 December 2022 - 30 November 2025	RM160,900.00

Short Term Grants

No.	Project Title	Project Leader	Period	Amount
1.	New Coefficient of Variation Control Charts based on Variable Charting Statistics in Industry 4.0 for the Quality Smart Manufacturing and Services	Ts. Dr. Chew Xinying	1 Jun 2022 - 31 Mei 2024	RM35,000.00
2.	The Usability Evaluation Framework for Malaysia Higher Education Institution's Learning Management Systems (LMS)	Dr. Lim Chia Yean	1/7/2023 30/6/2025	RM15,900.00
3.	Modelling Immersive Educational Learning via Virtual Reality Game	Dr. Siti Hazyanti Binti Mohd Hashim	1/4/2023 -30/4/2025	RM36,000.00

RU Team

No.	Project Title	Project Leader	Period	Amount
1.	Vehicles Classification Using Deep Learning Method to Produce a Data Set for Analytics Process	Dr. Mohd Nadhir Bin Ab Wahab	1 Mei 2022 - 30 April 2024	RM67,547.00
2.	A Multi-actor Energy Distribution Model Based on Blockchain for Nationwide Solar Power Adoption	Dr. Teh Je Sen	1 Jun 2022 - 31 Mei 2024	RM59,050.00
3.	Smart Integrated Temperature Control System for the Pyrolysis Process (SITCSP2)	Profesor Madya Mohd Azam Bin Osman	1 Julai 2022 – 30 Jun 2024	RM63,600.00
4.	Design and Adaptation of Digital Technologies to Deliver an Evidence-, Needs-based Health Care Services System for Ageing Malaysian (ENHance-M) Using A Gig Economy	Ts. Dr. Anusha A/P Achuthan	1 Januari 2023 - 31 Disember 2024	RM60080.00

Collaborative Research in Engineering, Science and Technology (CREST)

No.	Project Title	Project Leader	Period	Amount
1.	Research Development And Validation Of Visual Cloud Systems Analytics Framework For Internet Of Things Applications	Prof. Dato' Dr. Bahari Belaton	18 October 2018 – 31 March 2024	RM 323,300.00

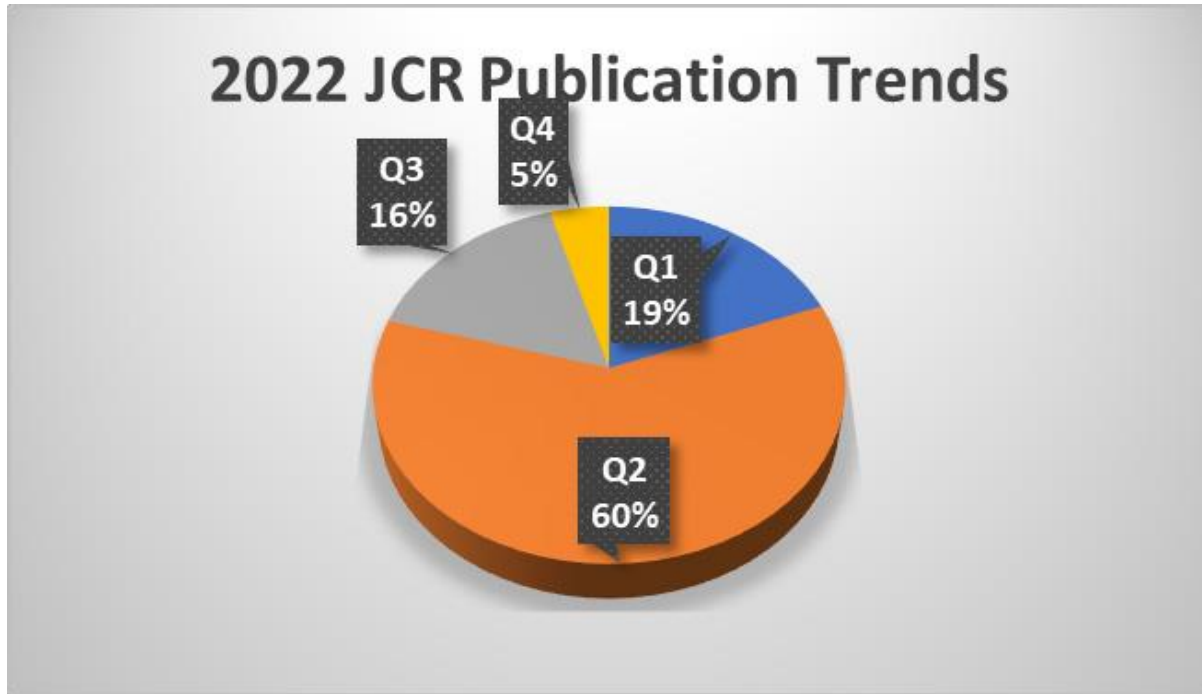
External Agency Funding Research Projects

No.	Project Title	Project Leader	Period	Amount
1.	Dimensionality Reduction For Smart Manufacturing	Profesor Madya Dr. Umi Kalsom Binti Yusof	1 April 2022 - 31 Mac 2025	RM325,340.00 (MICRON MEMORY MALAYSIA SDN BHD)
2.	Sad No More: Building Emotion Sensitive Systems To Detect And Prevent Depression	Dr. Jasy Liew Suet Yan	Lanjutan I: 1 Mac 2018 – 28 Februari 2022 Lanjutan II: 28 Februari 2022 – 2/28/2023 Lanjutan III; 28 February 2024	RM30,000.00 (L'OREAL Malaysia Sdn. Bhd.)
3.	Research Collaboration On Harnessing Computer Science Education Among Teachers And Students At Secondary School In Penang	Dr. Zarul Fitri Bin Zaaba	15 Julai 2023 - 15 Januari 2024	RM24,290.00 (Penang Science Cluster)
4.	Implementation And Experiment Of The Research Platform In Southeast Asia For "Ddos Attack Detection Framework Using Machine Learning In Software Defined Network"	Ts. Dr. Mohd Najwadi Bin Yusoff @ Abdul Rahman	1 Julai 2023 – 30 Jun 2025	RM131,479.88 (Keio University)

Community Engagement Project

No.	Project Title	Project Leader	Period	Amount
1.	Memperkasakan Pengesanan Kemurungan Di Kalangan Pelajar Sekolah Melalui Profiling Dashboard Powerbi	Dr. Syaheerah Binti Lebai Lutfi	30 Mei 2022 - 30 April 2023 Lanjutan I: 30 April 2023 –31 Disember 2023	RM9,400.00
2.	Enhancing Users' Experience On Myhati Platform For Charity Support	Profesor Madya Mohd Azam Bin Osman	1 Ogos 2021 - 29 Julai 2023	RM12,900.00

Research Publication



No.	Q1 Publications
1.	Zhang, H., Cheah, Y.-N., Alyasiri, O.M., An, J. Exploring aspect-based sentiment quadruple extraction with implicit aspects, opinions, and ChatGPT: a comprehensive survey (2024) Artificial Intelligence Review, 57 (2), art. no. 17, . DOI: 10.1007/s10462-023-10633-x.
2.	Alnoor, A., Tiberius, V., Atiyah, A.G., Khaw, K.W., Yin, T.S., Chew, X., Abbas, S. How Positive and Negative Electronic Word of Mouth (eWOM) Affects Customers' Intention to Use Social Commerce? A Dual-Stage Multi Group-SEM and ANN Analysis (2024) International Journal of Human-Computer Interaction, 40 (3), pp. 808-837. DOI: 10.1080/10447318.2022.2125610.
3.	Tijjani, S., Ab Wahab, M.N., Mohd Noor, M.H. An enhanced particle swarm optimization with position update for optimal feature selection (2024) Expert Systems with Applications, 247, art. no. 123337 DOI: 10.1016/j.eswa.2024.123337.
4.	Liu, Z., Letchmunan, S. Representing uncertainty and imprecision in machine learning: A survey on belief functions (2024) Journal of King Saud University - Computer and Information Sciences, 36 (1), art. no. 101904 DOI: 10.1016/j.jksuci.2023.101904.
5.	Liu, Z., Letchmunan, S. Enhanced Fuzzy Clustering for Incomplete Instance with Evidence Combination (2024) ACM Transactions on Knowledge Discovery from Data, 18 (3), art. no. 72 DOI:10.1145/3638061.

6.	Abubakar, S., Mohd Shariff, A.R., Fadilah, S.I. Numerical Approximation of 5G-V2V Physical Sidelink Shared Channel (PSSCH) Capacity Limit using M/G/1 Queuing and Newton–Raphson Method (2023) Alexandria Engineering Journal, 71, pp. 201-207. DOI: 10.1016/j.aej.2023.03.045.
7.	Al-Amiedy, T.A., Anbar, M., Belaton, B., Bahashwan, A.A., Hasbullah, I.H., Aladaileh, M.A., Mukhaini, G.A. A systematic literature review on attacks defense mechanisms in RPL-based 6LoWPAN of Internet of Things (2023) Internet of Things (Netherlands), 22, art. no. 100741. DOI: 10.1016/j.iot.2023.100741.
8.	Chen, L., Chan, H.Y. Generative Adversarial Networks with Data Augmentation and Multiple Penalty Areas for Image Synthesis (2023) International Arab Journal of Information Technology, 20 (3), pp. 428-434. DOI: 10.34028/iajit/20/3/15.
9.	AL-Aswadi, F.N., Chan, H.Y., Gan, K.H., Alma'aitah, W.Z. Enhancing relevant concepts extraction for ontology learning using domain time relevance (2023) Information Processing and Management, 60 (1), art. no. 103140. DOI: 10.1016/j.ipm.2022.103140
10.	Karkonasasi, K., Cheah, Y.-N., Vadiveloo, M., Mousavi, S.A. Acceptance of a Text Messaging Vaccination Reminder and Recall System in Malaysia's Healthcare Sector: Extending the Technology Acceptance Model (2023) Vaccines, 11 (8), art. no. 1331. DOI: 10.3390/vaccines11081331.
11.	Chew, X.Y., Khaw, K.W., Alnoor, A., Ferasso, M., Al Halbusi, H., Muhsen, Y.R. Circular economy of medical waste: novel intelligent medical waste management framework based on extension linear Diophantine fuzzy FDOSM and neural network approach (2023) Environmental Science and Pollution Research, 30 (21), pp. 60473-60499. DOI: 10.1007/s11356-023-27165-0.
12.	Lee, M.H., Khoo, M.B.C., Haq, A., Wong, D.M.L., Chew, X. Synthetic c charts with known and estimated process parameters based on median run length and expected median run length (2023) Quality Technology and Quantitative Management, 20 (2), pp. 168-183. DOI: 10.1080/16843703.2022.2098456.
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CS Ranking

Ranking	2021	2022
	251-300	201-250
	501-600	401-500

Industry and Engagement

Award Ceremony: In-house Professional Certificate Of Data Science Program for Intel Malaysia

This exclusive, in-house program was initiated in Jun 2023 and concluded in September 2023. The program encompassed six Modules, Sessions were conducted twice a week on the weekdays, over a period of 12 enlightening weeks.



Tech Experience Alumni Sharing (Texas): Series 1

TEXAS Series 1 has been held on 13th June 2023, 3pm, in USM CS Auditorium. It is a great honor to have Mr. Yeoh Shih Hoong, the Senior Vice President of Vitrox Technologies Sdn. Bhd. as the speaker for the session. Mr. Yeoh is a USM CS Alumni, majoring in Software Engineering, currently leading the RnD department for some tools and technologies in his company.



CODEMAVERN 3.0 GIRLS2CODE

CodeMaven 2.0 Girls2Code, jointly organized by the School of Computer Sciences, Universiti Sains Malaysia (CS USM) and Telebort, follows a LAUNCH, CODE and JAM model to encourage young girls (7 - 12 years old) to learn coding and become technology creators.

CodeMaven community program structure starts with a virtual launch (LAUNCH), followed by a series of coding workshops (CODE), and ends with a coding challenge (JAM). Currently in our third installment after the initiation of the program in 2019, CodeMaven 2.0 was held in conjunction with the International Girls in ICT Day 2023.





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A Day Trip To The Asia Pacific Customer Centre 2, Bukit Minyak



CS students make a physical factory tour to Dell APCC2 on 2nd February 2023



Digital Literacy Program for Children at MASA@Sungai Nibong.

This Literacy Program is a collaborative initiative among the Centre for Islamic Development Management Studies (ISDEV), Penang Zakat (ZPP), and the School of Computer Sciences, USM, involving educators from Authentic BOT EdTech Solutions (Abott). It is an effort to empower the asnaf (under-privilege and poor) family, while also developing a competitive and productive community in the urban area.



HILTI

CAREER TALK @ USM



JEEVEN RAVI
TEST AUTOMATION ENGINEER

- LIFE AT HILTI
- LIFE AS A TEST ENGINEER
- ABOUT TEST AUTOMATION
- PRO TIPS TO GET HIRED



JOIN US
@ MICROSOFT TEAMS



26 JUNE, 2023
11.00AM - 1.00PM

Career Talk @ USM by HILTI

Date: Mon, 26 June, 2023

Time: 11.00 am - 1.00 pm

Career Talk by VeecoTech



USM UNIVERSITI
SAINS
MALAYSIA



**SCHOOL OF
COMPUTER
SCIENCES**
UNIVERSITI SAINS MALAYSIA

WEEKLY CAREER TALK



VeecoTech

This week's Career talk will be featuring VeecoTech Solutions Sdn Bhd.

Established in 2011, VeecoTech is a leading Malaysia software IT solution company, specialized in helping businesses to achieve their success through web design, ecommerce, mobile app, software, SEO, and digital marketing.

The Managing Director, Mr. Alain Lye will be sharing the trends, process and expectation on mobile application, introduction to Entrepreneurship and vacancies for both internship and fresh graduates.

**Venue: 2nd Level, Auditorium,
School of Computer Sciences,
Universiti Sains Malaysia**

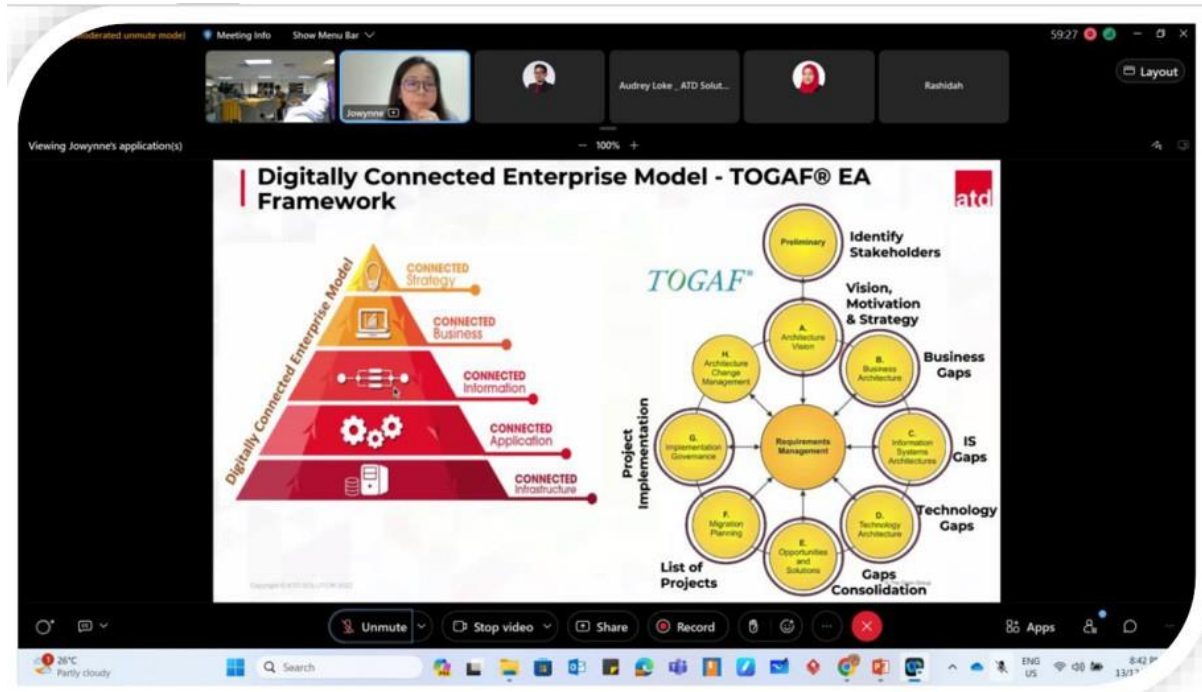
Time: 11am-1pm

Date: 12th June 2023

Industrial Talk: Madam Jowynne Khor (ATD Solution Sdn.Bhd)

Date: 13 December 2023 (Wednesday)

Topic: Enterprise Architecture(EA) Competency for Digital Business Transformation



Robofun Hackathon Sharpens Trainers' And Students' Skills On Mobile Robots

Universiti Sains Malaysia (USM) via the School of Computer Sciences, Collaborative Microelectronic Design Excellence Centre (CEDEC) and Sains@USM, in collaboration with Malaysia Investment Development Authority (MIDA), Intel Corporation and Malaysia Productivity Corporation (MPC) recently hosted The Hackathon Kick-Off for Robotics for University (ROBOFUN) workshop, a four-day training programme held at The Makers Lab in USM.



Intel Guest Lecture for Real-Time Software Engineering Class (9 May 2023)

Introducing Agile Programming and Lean practices



NI Guest Lecture for Software Engineering Classes (21 June 2023)

Introducing real-time operating system.



Pitching Your Way Up

AP Dr. Chan Siok Yee, Associate Professor, School of Pharmacy/ Pictch@USM Lead

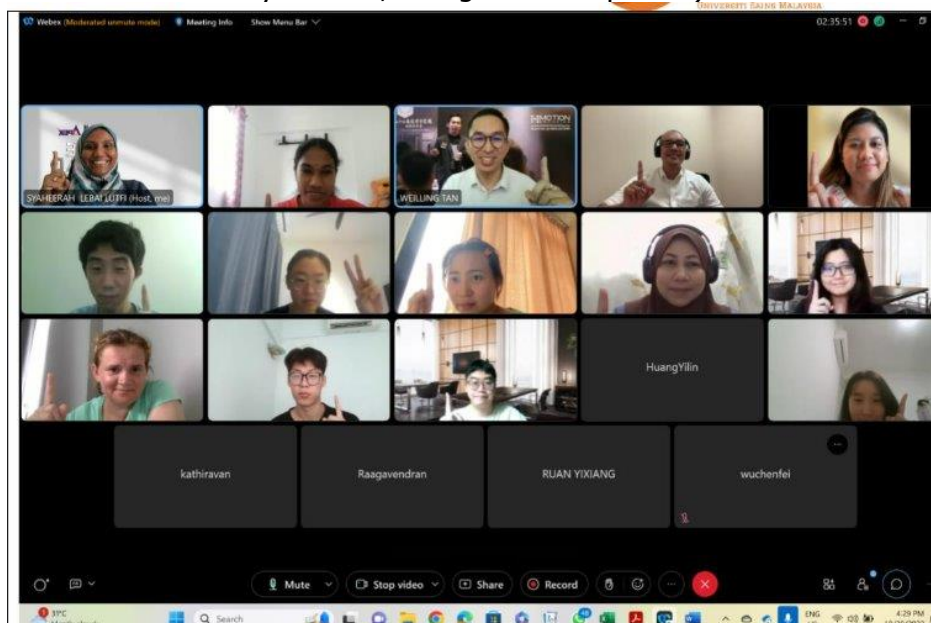
Sharing tips and advises on the techniques of pitching to investors.



Guest Lecture on Key Digital Branding & Marketing Strategies for Higher Influences in Digital Era

Date: Sunday, 29th October 2023 Time: 2.00-5.30 PM

Mr. Weiling Tan, a seasoned professional with over two decades of experience in branding and marketing (ask Dr. Syaheerah, background of speaker)



Mooiko Sdn. Bhd. Collaboration (Guest Lecture, Academic Judge, Grant industry partner)



Guest Lecture

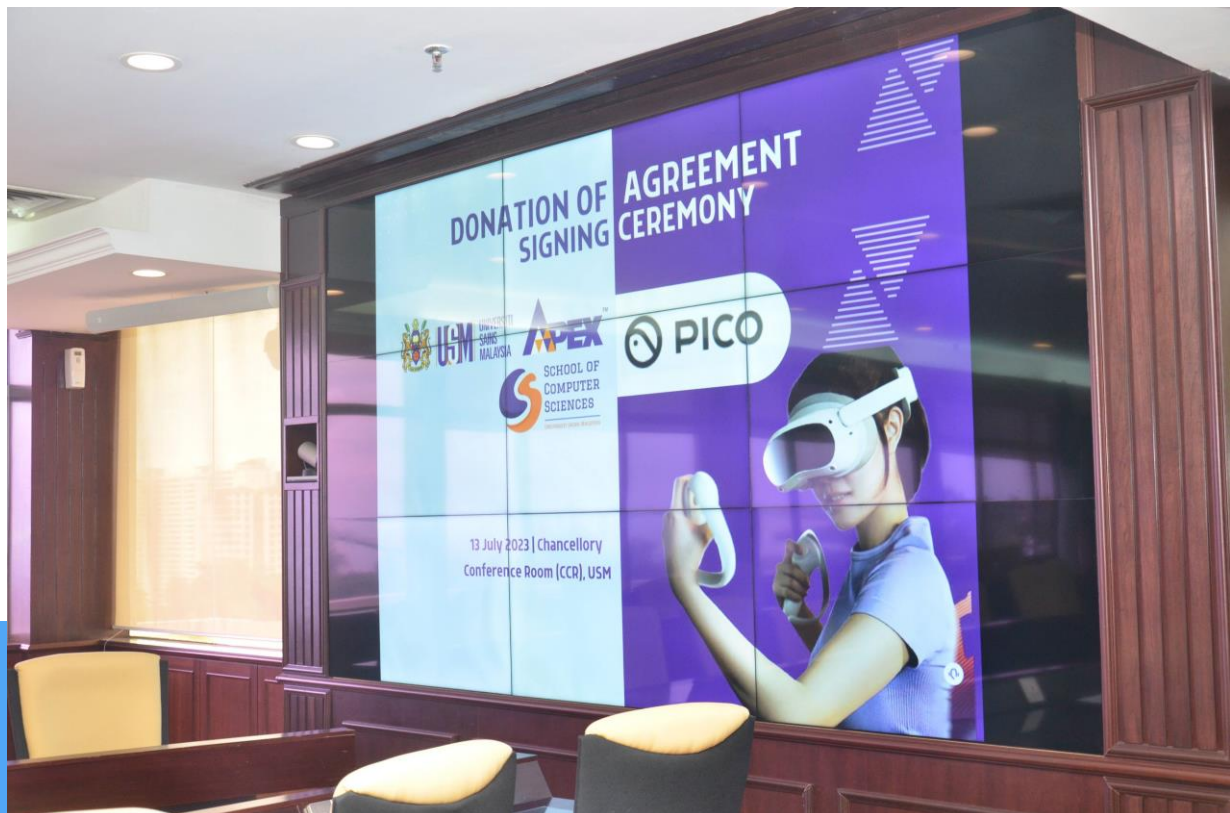


From Data to A.I. Deep Learning Landscape Technology Stack, Use Case and Application

Ts. Dr. Muhammad Imran Sarwar,
Adjunct Associate Professor, Chief
Technology Officer, Datalytica Sdn
Bhd.



Donation of Agreement Signing Ceremony School of Computer Science - PICO



Guest Lecture for TRIZ and Lean Six Sigma by TRIZ instructor from UOW Malaysia KDU Penang UC





ACTIVITIES



Soft launch of the UG Lounge aka Coder's Chamber (Level 2) and PG Lounge (Level 4) by the Dean & Exco Members on Jan 10, 2023.



A DAY TRIP TO THE ASIA PACIFIC CUSTOMER CENTRE 2 (APCC2), BUKIT MINYAK
A few years after the MCO, finally CS students make a physical factory tour to Dell APCC2 on 2nd February 2023. The inspiring seminar delivered by Mr. Leonard Tan, the Business Operation Director; the amazing factory tour to understand the in and out of the production line; and also, the warm CNY celebration event, has made the trip to APCC2 remarkable.



22. Visit of USM's Deputy Vice Chancellor (Industry & Community Network), Prof. Dr. Azlan Amran to the Computer Science Study Center on March 10, 2023, accompanied by the Head of the Internal Audit Unit, the Senior Deputy Treasurer from the Procurement, Assets and Strategic Division, the Treasurer's Department and the University's Occupational Safety and Health Unit (UKKP).



School of Computer Sciences (Pusat Pengajian Sains Komputer) USM is proud to have organized the Welcoming Ceremony for Postgraduate Students, Semester 2, 2022/2023 (March Intake) on 17 March 2023.



A CAREER IN START-UP 1.0

The event which was organised on April 3rd, 2023, saw quite a good turnout especially among the final year students.



Robofun hackathon sharpens trainers' and students' skills on mobile robots



Tech EXperience Alumni Sharing (TEXAS): Series 1

TEXAS Series 1 has been held on 13th June 2023, 3pm, in USM CS Auditorium. It is a great honor to have Mr. Yeoh Shih Hoong, the Senior Vice President of Vitrox Technologies Sdn. Bhd. as the speaker for the session.

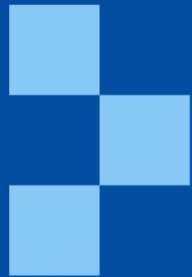


Project Innovation & eXploration in Computer Science Education and Learning (PIXEL 2023) is an annual grand showcase of innovative tech projects by USM final-year computer science students, organised by the Computer Science Society in collaboration with the School of Computer Sciences, Universiti Sains Malaysia.



Well Done Dr. Zarul and team for the presentation of interactive talk entitled "Exploring The Computer Science Realms" which was undoubtedly one of interesting ways to promote CS (in particular CS@USM) as potential career paths before a bunch of secondary school students in Penang.





CodeMaven 2.0 Girls2Code



CODEMAVEN 2.0

It's a wrap!



CS USM DEAN'S LIST AWARD CEREMONY (SEMESTER 1, 2022/2023)





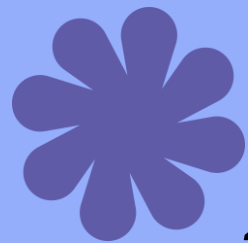
CODEMAVE
3.0 |
STEM
PROGRA

MARA
STEM-GREENTECH @ MRSM
Kepala Batas (20th October
2023)



Competition Awards

ISSUE 14



28th Feb 2023 -Universiti Sains Malaysia (USM) is proud to recognize the outstanding academic achievements of its students who were awarded the prestigious ‘Hadiah Kepujian’ for the 2021/2022 academic session. The ‘Hadiah Kepujian’ is a testament to exceptional academic performance, and USM extends its heartfelt congratulations to all the recipients. This year's awardees include:



***Mr.Tan Chi Feng (Year 3)
Ms. Eng Jia Ying (Year 2)
Mr.Yeo Ying Sheng (Year 1)***



14th April 2023-USM Student Wins Gold at International Invention, Innovation, & Design Competition (i3DC 2023)-The incredible achievement of Chew You Shen, a Year 4 undergraduate student, at the International Invention, Innovation, & Design Competition (i3DC 2023). Chew emerged victorious, securing the prestigious Gold Medal with the guidance of his esteemed supervisor, Dr. Jasy Liew Suet Yan.



14th May 2023 - Dr. Mohd Nadhir Ab Wahab Wins Gold at 3rd International Invention, Innovation & Technology Exhibition in Malaysia

In a remarkable display of ingenuity and innovation, Dr. Mohd Nadhir Ab Wahab has been awarded the prestigious gold medal at the 3rd International Invention, Innovation & Technology Exhibition (ITEX) in Malaysia. This accolade highlights his significant contributions to the field of technology and invention, showcasing not only his personal achievements but also the potential for groundbreaking advancements within the scientific community.



27th May 2023 - Heartiest congratulations to Mr. Then Tai Yu, Ms. Ooi Pei Yin, Ms. Lee Ying Hooi, Ms. Teng Eileen, and Ms. Wong Jia Yi, a team of passionate year 2 computer science undergraduates from the School of Computer Sciences, for their remarkable achievement as the first runner-up winners in the prestigious "BizMaker 2023" Competition! BizMaker 2023 is a national-level inter-university business proposal competition organized by Management Society USM, revolved around the theme of "Digital Transformation".

25&36 August Best paper and presentation at ICCSCE 2023



Kevin Faisal AlKindy, CDS590 Sem 1 Yusuf Abas MohamKevin Faisal AlKindy, a CDS590 student from Semester 1 of the 2022-2023 academic year, was awarded best paper for his work titled "An Automated Day 3 Embryo Grading Based on Morphological Characteristics Using CNN with Transfer Learning Technique." Another CDS590 student, Yusuf Abas Mohamed, also received accolades for best presentation with his online presentation of "An Automated System for Grading the Quality of Blastocyst Embryos Using Convolutional Neural Networks and Transfer Learning."ed,CDS590 student



Dr. Lim Chia Yen INTERNATIONAL SPECIAL AWARD BEST WOMAN INVENTOR AWARD

USM PENANG, 11 September 2023 – Two academicians from Universiti Sains Malaysia (USM) won awards at the International Invention Innovation Competition (iCAN) 2023 held in Toronto, Canada.



22nd Oct -In the Malaysia Inter-Varsity Hackathon (UTM-USM-AlgoHub), USM students achieved outstanding success by winning first and second place, as well as the best business case prize. Their remarkable performance in this competitive event was guided by the expert supervision of Dr. Lim Chia Yen, highlighting the exceptional talent and innovation fostered at USM.



23rd Oct-Dr. Azman Ab Malik achieved remarkable success at The National Innovation Competition (MyInstinct) 2023 securing two Gold Awards and the prestigious Best Presenter Award. His innovative projects stood out in the competitive field, earning recognition for their significant impact and practical applications.



21st October -three students,Michelle Ling Mya Shuet, Abdul Qayyum Annuar, and Muhammad Suhaimi Mohd Shahudi— participated in the ROBOFUN Hackathon 2023 at Da Men Mall, Subang, accompanied by Dr. Azman Ab Malik. Co-organized by Intel, SCUTTLE Robotics Asia, Malaysia Productivity Corporation (MPC), and Malaysian Investment Development Authority (MIDA), the hackathon saw the team advance to the semi-final round and win the Consolation Prize in the final round. The School of Computer Sciences extends its gratitude to Dr. Azman Ab Malik, Dr. Mohd Nadhir Ab Wahab, Assoc. Prof. Dr. Wong Li Pei, Assoc. Prof. Ts. Dr. Fatanah Mohamad Suhaimi (Advanced Medical & Dental Institute), Makerspace@USM, and BHEPPA for their invaluable support.



27th October - Johnson Olanrewaju Victor won first prize in the Article Writing Competition 2023, under the supervision of Ts. Dr. Chew XinYing, showcasing exceptional writing skills and academic excellence.



innovation in software development.

On December 11, 2023, Mohamad Firdaus Bin Kasah, a final-year Software Engineering student, won the Platinum Award (First Prize) at the OPPO ColorOS Hack 2023. His outstanding achievement earned him a cash prize of 20,000 USD, highlighting his exceptional talent and

