FCSIT

BULLETIN 2020

FAKULTI SAINS KOMPUTER DAN
TEKNOLOGI MAKLUMAT
Faculty of Computer Science & Information
Technology

CONTENTS | EDITORIAL BOARD

EDITOR'S NOTE

Welcome to the first edition of the Faculty of Computer Science & Information Technology (FCSIT) Bulletin! This bulletin aims to share with our readers about both academic and non-academic endeavours of the Faculty.

We are proud to present activities and achievements of our Faculty members in the areas of teaching and learning, research, community engagements, and industry collaborations.

Also included in the Bulletin are information about our undergraduate and postgraduate programmes, a selected list of publications, a directory of Faculty members' research interests, as well as information from the Institute of Social Informatics and Technological Innovations (ISITI), the Tourism Innovation Centre (TIC) and the Gamification Centre (GC).

The bulletin also presents special projects undertaken by Faculty members that are related to the COVID-19 pandemic. Our members have stepped up to contribute their expertise and time to assist at local and global levels.

Thank you for your time in reading this bulletin, I hope you enjoy it. Please do not hesitate to contact us if you are interested to collaborate with us, or if you have further questions.

My sincere gratitude also goes to all the content contributors, thank you for your time and support.

Emmy Dahliana Hossain
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DEAN'S MESSAGE

Congratulations and thank you to the editor, Ms Emmy Hossain and editorial team, who have successfully compiled and produced this faculty Bulletin for the year 2020. This bulletin is a comprehensive compilation of all our faculty members' success stories and achievements, both academic and non-academic, throughout 2019 and 2020, especially in relation to researches, publications, consultation projects, commercialization, postgraduate programme and community activities that reflects our research direction and highlighting the expertise of our lecturers.

This bulletin is part of the continuing effort to share faculty activities, and also as a reference to others who intend to collaborate with us in whatever capacity, be it as a co-researcher, a co-supervisor or to find a supervisor for Master and PhD candidates. It is also to highlight that our faculty members are also very active in community engagement and industry collaboration. I also hope that this bulletin will also give ideas and inspiration for possible future projects and research.

That said, I would like to take this opportunity to congratulate faculty members who have published their research in journals and conference proceedings, who have successfully secured internal and external research grants, consultations, commercialization and community projects. It is not an easy and short term task, and high commitment and efforts are needed.

Keep up the good momentum and stay inspired to achieve more in the future!

A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty — Winston Churchill

Associate Professor Dr Kartinah Zen
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PROGRAMMES OFFERED

UNDERGRADUATE

BACHELOR OF COMPUTER SCIENCE WITH HONOURS (COMPUTATIONAL SCIENCE)

Computational Science is the field of study concerned with constructing mathematical models and their numerical solution techniques, as well as using computers to analyze and solve scientific, social, and engineering problems. Upon successful completion of the programme, graduates would be capable of modelling real world problems, analysing data and provide solutions for the scientific and industrial communities by using advanced computer techniques and technologies. Graduates would be able to pursue careers such as (but not limited to): statisticians, software developers, system analysts, programmers, production and logistics planners, operational research analysts and research scientists.

BACHELOR OF COMPUTER SCIENCE WITH HONOURS (INFORMATION SYSTEMS)

Information Systems program is concerned with the development of information systems that are able to get the right information to the right people at the right time and which are strategic assets of organizations. Upon successful completion of the programme, graduates would be competent in deciding how technology are utilized to support organizational/business objectives or to create new opportunities, determine the supporting process and data, implement computer-based systems and also developing new and innovative products. Graduates would be able to pursue careers such as (but not limited to): information system officers, system analysts, database administrators, project managers, application developers, application consultants, business analysts, business process analysts, user interface designers, web content managers, e-business managers, IT consultants, IT architects, research officers and educators.

BACHELOR OF COMPUTER SCIENCE WITH HONOURS (MULTIMEDIA COMPUTING)

Multimedia Computing is the study of presentation, integration and computation of various media using computing techniques and this programme encompasses theories and applications in multimedia interaction, and synchronization of multi-modality media types such as video, audio, images, etc. Upon successful completion of the programme, graduates would be equipped with the knowledge of multimedia systems implementation, and the capability to develop various multimedia applications and tools. Graduates would be able to pursue careers such as (but not limited to): Web developers, Web-based system developers, mobile app and content developers, and multimedia software developers.

## BACHELOR OF COMPUTER SCIENCE WITH HONOURS (SOFTWARE ENGINEERING)

Software Engineering is a discipline that involves the application of scientific and engineering principles towards the development, operation and maintenance of computer software programs. The programme curriculum emphasizes on the fundamentals in software engineering, methodology, tools for software development as well as methods in assessing the quality of the software that is developed. Upon successful completion of the programme students would be capable of developing software programs of high quality, developed on time and easy to maintain and reuse. Graduates would be able to pursue careers such as (but not limited to): software engineers, system analysts, software testers, software architects, project managers, software administrators and software development consultants.

BACHELOR OF COMPUTER SCIENCE WITH HONOURS (NETWORK COMPUTING)

Network Computing programme focuses on the integration of hardware and software technologies such as high-speed and high-performance computer networks, wireless and mobile systems and networks. Students are equipped with the knowledge of core areas in network computing where they are able to model and build computer network environments. Upon successful completion of the programme students would be competent to model and build network computing environments, taking into consideration the interconnectivity between systems and devices. They will also be able to plan, design, implement and evaluate computer system environments including network architecture and operation management. Graduates would be able to pursue careers such as (but not limited to): computer network administrators, network engineers, system programmers, network programmers, network communication consultants, and computer network officers.

For more information, please contact:

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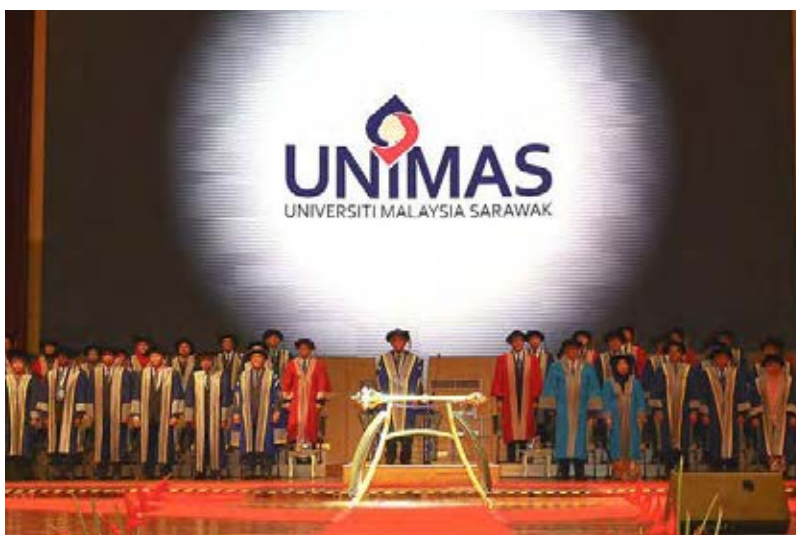
PROGRAMMES OFFERED

POSTGRADUATE

COURSEWORK: MASTER IN INFORMATION TECHNOLOGY MANAGEMENT (MITM)

This master by coursework programme is opened to candidates from various backgrounds to equip them with in-depth understanding of knowledge, mastery of skills and research methods related to the field of Information Technology, and devise IT solutions to fulfil industry requirements. The programme involves lectures, seminars and project work.

Candidates are required to successfully complete 40 credits as required by the programme and achieve a final Cumulative Grade Point Average (CGPA) of at least 3.00 in order to graduate. Intakes are available every February and September. There are two modes of study for this programme: Full time (1 year) and part-time (2 years). Classes are conducted on the weekends.

For more information, please contact:

Dr. Suhaila bt Saee
MITM Coordinator
ssuhaila@unimas.my

FULL RESEARCH: MASTER OF SCIENCE (MSc) AND DOCTOR OF PHILOSOPHY (PhD)

Candidates will be assigned to an experienced member of the Faculty as a supervisor, or to a supervisory panel. The supervisory panel consists of members of the faculty and/or experts from within/outside the University. The normal duration of study for a Master's degree (by research) is 2-4 years full-time or 3-6 years part-time. The normal duration of study for a PhD (by research) is 3-6 years full-time and 4-8 years part-time. Candidates will be examined through the presentation of a thesis and a viva voce examination, and will be awarded the degree on completion of all eligible aspects as determined by the Graduate Studies Committee. The Faculty offers both MSc and PhD by research in various computer science areas of interest, such as (but not limited to):

- Computational Linguistics
- Human-Computer Interaction
- Knowledge Management Technology
- Mobile Networking
- Software Engineering
- Computational Science
- Social Informatics
- Wireless Networks
- Visual Information Processing
- High Performance Computing
- Information Security
- Mobile Computing
- Broadband Communications

For more information, please contact:

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PUBLICATIONS

2020

Ahmad, N. I. N., & Junaini, S. N. (2020). Augmented Reality for Learning Mathematics: A Systematic Literature Review. *International Journal of Emerging Technologies in Learning (IJET), 15*(16), 106–122.

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Shiang, C. W., Wai, S. Y., Jalia, N., & Bin Khairuddin, M. A. (2019). Agent oriented methodology for crime modelling and simulation. *International Journal of Recent Technology and Engineering, 8*(2 Special Issue 8), 1359–1365.

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Tabassum, G., Kulathuramaiyer, N., Harris, R., & Yeo, A. W. (2019). The indirect and intangible impacts of a telecentre on a rural community. *The Electronic Journal of Information Systems in Developing Countries, 85*(3), e12087.

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Tommy, C. A., Minoi, J. L., & Sian, C. S. (2019). Assessing Fun and Engagement in Mobile Applications for Children with Speech Delay. In *Applied Mechanics and Materials* (Vol. 892, pp. 79-87). Trans Tech Publications Ltd.

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Wai, S. Y., Shiang, C. W., Jali, N. B., & Khairuddin, M. A. Bin. (2019). Generating business modelling and simulation from evaluation report. *International Journal of Advanced Science and Technology, 28*(2), 208–214.

Wai, S. Y., Shiang, C. W., Zulkifli, S. F., Jali, N. B., & Khairuddin, M. A. B. (2019). Requirement Engineering meets Emotion: A case study of Quiz MASTer. *International Journal of Advanced Science and Technology, 28*(2), 215 - 222.

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Yusup, N. & Zain, Az. (2019). The Performance Review of mRMR for Gene Selection and Classification of DNA Microarrays. *IOP Conference Series: Materials Science and Engineering, 551,* 012040.

Yusup, N., Zain, A. M., & Latib, A. A. (2019, March). A review of Harmony Search algorithm-based feature selection method for classification. In *Journal of Physics: Conference Series* (Vol. 1192, No. 1, p. 012038). IOP Publishing.

RESEARCH GRANTS

The Faculty had successfully secured various research grants amounting to more than RM3 million in 2020.

Matching
RM20,000

Internal
RM134,000

External
RM589,000

RM3 million

Industrial
RM2,258,000
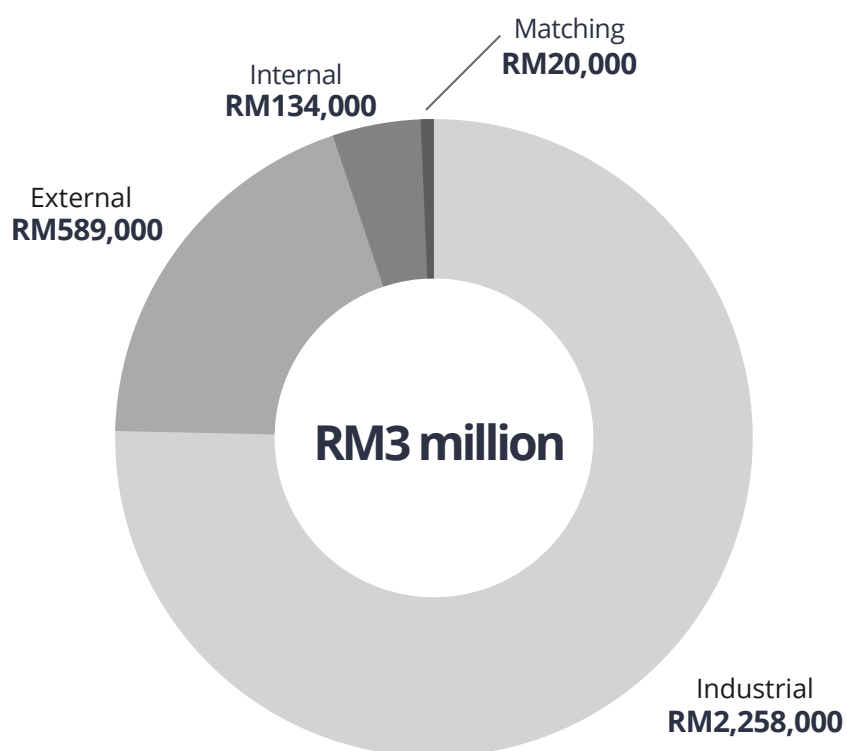
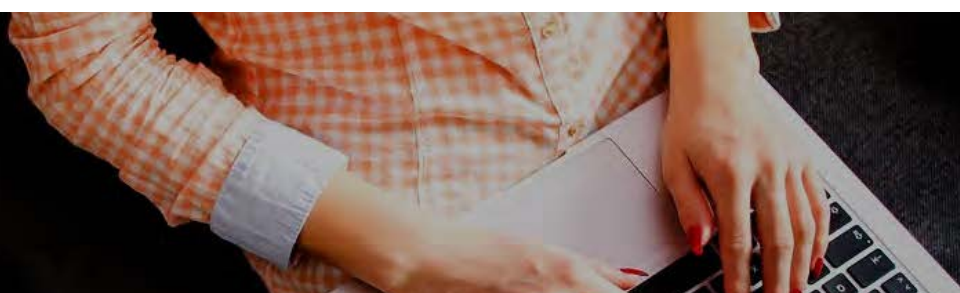# *RESEARCH INTERESTS DIRECTORY*

Prof Dr Narayanan Kulathuramaiyer

- Community innovation
- Human centered computing
- Artificial intelligence

Prof Dr Wang Yin Chai

- Artificial intelligence
- Image processing
- GIS analysis

Assoc Prof Dr Chiew Kang Leng	Anti-phishing, steganalysis on digital images, information hiding
Assoc Prof Dr Edwin Mit	Formal methods software engineering
Assoc Prof Dr Jane Labadin	Computational modeling of dynamical systems, infectious disease modeling
Assoc Prof Dr Johari Abdullah	Trusted system, blockchain technology, web system design and development, system architecture, TRIZ, ICT education for children and youth through Computational Thinking, Scratch and Computer Science Unplugged, open source system and software
Assoc Prof Dr Kartinah Zen	Wireless sensor networks data transmission and sensor-related network technology and application
Assoc Prof Dr Noor Alamshah Bolhassan	Spatial media, programming, web technology, and Internet of Things (IoT)
Assoc Prof Dr Tan Chong Eng	Wireless network, broadband access technology, green architecture and communication system optimisation
Assoc Prof Dr Dayang Nurfatimah Awang Iskandar	Spatiotemporal image analysis, semantic representation and retrieval
Assoc Prof Dr Halikul Lenando	Mobile social networks communication protocols and data dissemination performance in opportunistic networks
Assoc Prof Dr Mohamad Nazim Jambli	Mobile Ad-hoc Network (MANET), Mobile Wireless Sensor Network (MWSN), Vehicular Ad-hoc Sensor Network (VASNET), Internet of Things (IoT), blockchain technology, recommendation systems, system performance and energy-efficient routing protocols
Dr Adnan Shahid Khan	Wireless communication, cloud computing, Internet of Things, software defined networking, cryptography, network and information security
Dr Azman Bujang Masli	Software engineering, formal specification and verification
Dr Bong Chih How	Artificial intelligence, natural language processing, data science and machine learning
Dr Chai Soo See	GIS, remote sensing, AI and image processing
Dr Cheah Wai Shiang	Agent oriented modelling , cognitive modelling, ICT4D, agent based computer vision
Dr Dayang Hanani Abang Ibrahim	Cultural heritage innovation, service learning, governance, Computational Thinking and educational learning system
Dr Hamimah Ujir	Computer vision, computer graphics, image processing, mathematical methods, 3D physical simulation and 3D static and dynamic facial expression analysis, academic quality
Dr Irwandi Hipni Mohamad Hipiny	Computer vision, pattern recognition and visual animal biometrics
Dr Jacey Lynn Minoi	Development of multivariate tensor-based and multivariate statistical shape analysis algorithms for shape modelling across multiple dimensions and for pattern recognition, practitioner of game science for teaching and learning
Dr Lau Sei Ping	Wireless sensor networks, applied computing, cybersecurity, Internet of Things, and green architecture
Dr Mohammad Hossin	Data mining optimization, machine learning, data analysis and visualization and intelligent decision support system
Dr Mohammad Imran Bandan	Cloud computing architecture, reliability engineering, fault tolerant system, IoT architecture, distributed system, algorithm design
Dr Nadianatra Musa	IT governance

Dr Nuha Loling Othman	Partial differential equation (PDE), variational inequality, analysis, mathematical modeling
Dr Sarah Flora Samson Juan	Speech recognition, speech synthesis systems, language data acquisition methods, computational thinking in computing education
Dr Shapiee Abd Rahman	Regression analysis, statistical data mining, design of experiments
Dr Stephanie Chua Hui Li	Data, text and image mining, artificial intelligence and machine learning, applied data, text and image mining and exploratory data visualization and analysis
Dr Sze San Nah	Educational timetabling, vehicle routing, heuristic and meta-heuristics
Dr Tiong Wei King	Nonlinear waves and mathematical modelling
Dr Wang Hui Hui	Image processing
Dr Yanti Rosmunie Bujang	Ethics in Information Technology, Internet safety, cyber parenting, community services and software testing
Dr Fatihah Ramli	Information science, semantic technology, ontology development and information retrieval, service learning
Dr Phang Piau	Mathematical epidemiology, ordinary differential equations and game theory
Dr Suhaila Saee	Computational linguistics (computational morphology) and natural language processing, preserving under-resourced languages through speech and text processing
Dr Suriati Khartini Jali	Serious games, game-based learning, web/mobile-based design and application, human-centered computing, user Interaction (UI) and user experience (UX), interaction of technology and its capacity to be more responsive to specific user groups (i.e. older people, disabled people) acceptability and desirability
Dr Noralifah Annuar	Wireless sensor networks
Dr Sze Jeeu Fong	Vehicle routing problems, scheduling problems, heuristic and metaheuristic methods
Dr Lim Phei Chin	Extraction of meaningful information from digital image by means of digital image processing techniques, image mining in medical diagnosis, exploratory factor analysis to uncover the underlying structure of a relatively large set of measurable variables in educational field
Dr Tan Ping Ping	Computational linguistics, mobile Learning for children with learning disabilities and natural language processing
Ts Syahrul Hizam Junaini	Human-computer interaction, e-learning, augmented reality, cloud computing
Inson Din	Data and databases design, information systems design and digital marketing
Jonathan Sidi	User experience design, user interface design, user interaction design and gamification for adults
Nurfauza Jali	Requirement engineering, software design pattern, object oriented Design, preservation of ethnic minority languages in building of a multi-lingual corpora and the application of language technologies, community services
Abdul Rahman Mat	Requirement analysis and specification, knowledge-based system, formal method, and software testing
Ahmad Hadinata Fauzi	Internet of Things (IoT), network security and network administration
Amelia Jati Robert Jupit	Player experience, player identity, games, cultural preservation through games

Azlina Ahmadi Julaihi	Mobile wireless sensor networks and computer networking performance evaluation
Chiu Po Chan	Artificial intelligence, optimisation, human computer interaction, ICT and assistive technology for development
Eaqerzilla Phang	Software engineering, soft computing, object oriented, software and information system, image processing
Emmy Dahliana Hossain	Human computer interaction, interaction design, ICT for development, question answering systems
Hamizan Sharbini	Crowd behavior modelling (hybrid model), optimization and artificial intelligence
Izzatul Nabila Sarbini	Cryptology
Jennifer Fiona Wilfred Busu	System analysis and design, e-learning, educational technology and natural language processing
Lee Jun Choi	Natural language processing, data analytics, knowledge engineering and management
Ling Yeong Ting	Malware detection, machine learning
Mohamad Johan Ahmad Khiri	Requirement engineering, formal methods and service learning
Mohamad Nazri Khairuddin	Information trustworthiness, information security, social informatics, applied informatics, knowledge management, rural ICT development, project management, social technopreneurship and culture heritage
Muhammad Asyraf Khairuddin	Security in requirement engineering and requirement elicitation
Norfadzlan Yusup	Artificial intelligence, machining optimization, feature selection, wearable sensors, human activity recognition
Norazian Hamdan	Software engineering, artificial intelligence, software requirements, software development, object-oriented Programming, software architecture, Unified Modeling Language, requirements engineering, and requirements analysis
Noor Hazlini Borhan	Software engineering, requirement engineering & agile software development
Nurul Zawiyah Mohamad	Databases, ontology engineering, social informatics, learning analytics, learning technologies for the disadvantage communities and educational data mining
Rajan Thangaveloo	Computer security, network security and mobile security
Rosita Mohamed Othman	Requirement elicitation, service learning, information systems, e-learning, knowledge management
Seleviawati Tarmizi	Mobile Ad-Hoc Network, routing protocol, trust management
Terrin Lim	Statistical modeling specifically in the area of network modelling in biological field, climate modelling (wind profiles generation), ethical policies for biometrics/medical data and disease transmission modelling, network modelling of the transmission of vector-borne disease, big data applications and STEM initiatives via gamification
Wee Bui Lin	Software testing, software measurement and software modeling

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The best insurance policy for the future of an industry is research, which will help it to foresee future lines of development, to solve its immediate problems, and to improve and cheapen its products.

Sir Harold Hartley

CONSULTATION

Title	Team	Funder
eRaceColl: Web Based Solution for Race Entry Pack Collection	Dr. Sze San Nah Nurul Zawiyah Mohamad	Kuching City Hash Club Sdn Bhd
Old Kuching Kampung Heritage Cafeteria/Coffeehouse/Food Paradise	Dr. Nadianatra Musa Dr. Dayang Hanani	Sarawak State Government
Branding and Commercialization of Heritage Products and Service Eco-System	Dr. Nadianatra Musa Dr. Dayang Hanani	Sarawak State Government
Heritage Product Packing and Labelling	Dr. Nadianatra Musa Dr. Dayang Hanani	Sarawak State Government
Old Kuching Kampung Heritage Trail -Six Sites	Dr. Dayang Hanani Dr. Nadianatra Musa	Sarawak State Government
Digital Inclusivity Project • Digital Readiness • Digital Awareness and Buy-In	Dr. Nadianatra Musa Dr. Dayang Hanani Dr. Suhaila Saee AP Dr. Kartinah Zen AP Dr. Halikul Lenando Dr. Sarah Flora Dr. Cheah Wai Shiang Dr. Fatihah Ramli Seleviawati Tarmizi Rosita Mohamed Othman Jennifer Fiona Abdul Rahman Mat Mohamad Johan Eaqerzilla Phang Mohamad Nazri	Sarawak Multimedia Authority (SMA)
Kampung Heritage Hospitality and Services Infrastructure Tourism Products and Services with Old Kuching Heritage Branding • Jetty Facilities Upgrade • Homestay Facilities and Service Upgrade	PM Dr. Johari Abdullah PM Dr. Noor Alamshah	Sarawak State Government
Propose Digitalization of Water Supply in JBALB Sarawak	PM Dr. Johari Abdullah Prof Dr. Wang Yin Chai PM Dr. Dayang NurFatimah Ahmad Hadinata Fauzi	Jabatan Bekalan Air Luar Bandar
Sarawak Water Supply Grid Program - Stressed Areas: Proposed Digitalization Of Water Supply In JBALB Sarawak	PM Dr. Johari Abdullah PM Dr. Dayang NurFatimah Prof Dr. Wang Yin Chai Ahmad Hadinata Fauzi Dr. Peggy Loh Yee Wey Muhammad Aizuddin Shapi–Ee Khairul Nidzam Otman Batrisyia Sabawi	Jabatan Bekalan Air Luar Bandar Sarawak

Participants engage in an activity during a segment of the workshop.

Workshop guides teachers on Digital

COMMERCIALIZATION PROJECT

STEM Digital Makerspace at Woodlands International School, Sibu, Sarawak

Team: Dr Sze San Nah, AP Dr Johari Abdullah, Dr Sarah Flora Samson Juan, Dr Lau Sei Ping, Lee Jun Choi, Nurul Zawiyah Mohamad, Wee Bui Lin, Norazian Mohamad Hamdan, Jennifer Fiona Wilfred Busu.

The idea of a collaborative learning space for creating digital solutions was mooted by the management of Woodlands International School in Sibu, Sarawak to improve their learning environment.

The Faculty collaborated with the school in designing two classrooms and selecting gadgets that are suitable for their students and teachers to use, by providing the Service of Establishing Digital Makerspace, Digital Makerspace Training Module, and HRDF Training to STEM Teachers based on Digital Makerspace Training Module.

By September 2019, the classrooms were ready to use, and four faculty members travelled to Sibu to train 15 teachers on how to use the gadgets and conduct learning activities for their students. On the 22nd September 2019, the STEM Digital Makerspace at Woodlands International School was officially launched by Assistant Minister of Education, Science and Technological Research, Dr. Annuar Rapa'ee.

COMMERCIALIZATION
PROJECT

Digital Makerspace Starter Kit

Leader: Dr Lau Sei Ping

This scaled-down version of the physical Digital Makerspace can be placed anywhere there is free space, without needing any permanent space. This kit, developed by the team led by Dr. Lau Sei Ping, is equipped with essential Maker tools tailored for different learning stages and curriculum for both primary and secondary schools.

SACOFA Sdn. Bhd. has generously sponsored units of this kit for 6 rural schools in Sarawak: SK Maludam (Betong), SMK Bau (Bau), SJKC Min Daik (Maradong), SJKC Kai Chung (Maradong), SMK Mukah (Mukah, and SJKC Poi Yuk (Dalat).

FEATURED PROJECTS

Deep Learning for Classification of Astronomical Archives

Researcher: AP Dr Dayang Nurfatimah Awang Iskandar

This joint research project is led by FCSIT, UNIMAS and in collaboration between Universiti Sains Malaysia and Jodrell Bank Centre for Astrophysics, The University of Manchester, aims to research the implementation and application of High Performance Computing and Deep Learning algorithms that can be used to find patterns in astronomical archives.

This interdisciplinary research of astronomy and computer science is challenging as it poses a steep learning curve for understanding the domain and missing common vocabulary, particularly, as data sets grow and become more complex. The research project explores the Atacama Large Millimetre Array (ALMA) archive which consist images and knowledge related to first stars and galaxies that emerged from the cosmic "dark ages"; nearby universe; and the complex chemistry of the giant clouds of gas and dust that spawn stars and planetary systems.

We are privileged to be hosted by our research partner at Jodrell Bank Centre for Astrophysics, where it is the astronomical research centre of The University of Manchester and operates e-MERLIN (enhanced Multi Element Remotely Linked Interferometer Network, VLBI National Radio Astronomy Facility), the UK's national radio astronomy facility and UK ALMA Regional Centre (ARC) Node. This research have received funding from the Newton Science and Technology Facilities Council (STFC), UK and Ministry of Education - Collaborative Research for Higher Level STEM Skills Malaysia.

Antennas of the Atacama Large Millimeter/submillimeter Array (ALMA), on the Chajnantor Plateau in the Chilean Andes. The Large and Small Magellanic Clouds, two companion galaxies to our own Milky Way galaxy, can be seen as bright smudges in the night sky, in the centre of the photograph. Credit: ESO/C. Malin

AP Dr Dayang Nurfatimah attended the first Artificial Intelligence in Astronomy Workshop at the European Southern Observatory Headquarters, Garching, Germany in July 2019.

FEATURED PROJECTS

Global Challenge Research Fund (GCRF-UKRI) Project [2020-2023]

A Community-Centred Educational Model For Developing Social Resilience (ACES): Playfulness Towards An Inclusive, Safe And Resilient Society

*Team: **Dr Jacey-Lynn Minoi (FCSIT)**, AP Dr Fitri Suraya Mohamad (FCSHD), AP Dr Tan Chong Eng (FCSIT), Professor Dr Tarmiji Masron (FSSH), Dr Leonard Lim (FE), Dr Aazani Mujahid (FRST), Dr Floriana Lendai (FCSHD), Dr Farah Zaini (FSSH), and Mr. Chuah Kee Man (FLC)*

As Sarawak moves towards its Digital Economy agenda, the importance of an inclusive and equitable quality education in Sarawak is now becoming more apparent. Students need to be equipped with the necessary technical and soft skills in order to prepare themselves for IR 4.0. This is one of the main objectives of the ACES project, which aims at developing a community-centred pedagogical model that encourages the development of social resilience within local communities.

ACES
A Community-Centred Educational Model for Developing Social Resilience through Play

Spearheaded by a team of researchers comprising of Dr Jacey-Lynn Minoi, AP Dr Fitri Suraya Mohamad, Professor Dr Tarmiji Masron, AP Dr Tan Chong Eng, Dr Leonard Lim, Dr Aazani Mujahid, Dr Floriana Lendai, Dr Farah Zaini, and Mr. Chuah Kee Man, the project also looks at allowing young people to learn non-discipline specific capabilities which would build more than fulfilling friendships and exchanges of ideas.

The ACES project will also focus on innovation and design, social innovation and entrepreneurship, in the areas of STEM education, engineering and technology climate change, socio-economy, cultural heritage, special needs and learning disabilities, and sustainable agriculture. The project was recently launched on 24 June 2020 via a webinar, and saw presentations by partners from Coventry University, Universitas Muhammadiyah Ponorogo (UMPO), and Hanoi University of Science and Technology (HUST), who shared their perspectives and roles in the project.

Those who are interested in the project and would like to learn more about how to be a part of it, please visit https://is.gd/aces_my to connect with us. More details on the ACES project can be found on https://aces.gchangers.org/.

This project is funded by the United Kingdom Research and Innovation-Economic and Social Research Council (UKRI-ESRC) under the Global Challenges Research Fund (GCRF).

Special Action COVID-19 Task Forces Sarawak State Health Department

Researcher: Dr. Jacey-Lynn Minoi

Dr. Jacey-Lynn Minoi is a member of the Special Action COVID-19 Task Forces set up at the end of March 2020 by the Sarawak State Health Department to monitor and strengthen the plans for COVID-19 issues for Sarawak Disaster Management Committee (SDMC).

Headed by Professor Datu Dr. Andrew Kiyu Dawie ak Usop, former Sarawak State Health Director, and currently a Professor of Public Health in UNIMAS, the task forces function to perform real-time modelling and analysis of COVID-19 data in the state, providing plans for policymakers and state leaders with the estimated scale of outbreaks in the state.

The task forces have also developed local simulation tools based on the Susceptible-Infected-Recovered (SIR) model, Susceptible-Exposed-Infected-Recovered (SEIR) model with Markov chain Monte Carlo procedures based on Bayesian Inference, to make projection of the prevalence of infection each day and number of people requiring hospitalisation and critical care in hospitals in Sarawak.

The task forces also provide SDMC with evidences to ensure that the State Government understands the impact of COVID-19 to the Sarawak healthcare systems, the impact of MCOs and tracing measures, in preparation for the next waves.

Dr. Jacey-Lynn's expertise is used to estimate the potential trajectory of the pandemic and the impact of non-pharmaceutical interventions, the measure of mortality and to produce real-time modelling to estimate the effective reproduction number (Rt) of the COVID-19, in relation to the healthcare capacity and tree-based contact-tracing.

FEATURED PROJECTS

COVID-19 Multi-Model Comparison Collaboration (CMCC)

Researcher: Associate Professor Dr Jane Labadin

Associate Professor Dr Jane Labadin has participated in a unique initiative that aims to enhance the relevance and usefulness of modelling activities for supporting the COVID-19 response in low- and middle-income countries (LMICs), through informing domestic policy decisions. This work is being conducted in collaboration with the International Decision Support Initiative (iDSI), the World Health Organization (WHO), the World Bank Group and the Bill and Melinda Gates Foundation (BMGF), and the Office of National Higher Education Science Research and Innovation Policy Council (NXPO). The objective of the analysis will be to assess the relevance of the COVID-19 models and input data to specific questions pertinent to the current decision needs of policy makers in LMICs.

In addition, this comparative analysis will improve awareness amongst policymakers and technical staff in LMICs of the different COVID-19 models available to them and help them understand the models' respective assumptions and underpinning methods, in order to enhance their local use and improve evidence-to-policy translation. More details on CMCC can be found at https://decidehealth.world/en/cmcc.

Modelling the Effectiveness of Epidemic Control Measures in Preventing the Transmission of COVID-19 in Malaysia

Researcher: Associate Professor Dr Jane Labadin

Many countries have relied on mathematical models in assisting the forecast of the progression of the COVID-19. The Malaysian Ministry of Health have also consulted a group of disease modelers for decision making. One of the models referred was developed at the faculty.

The model is an extended Susceptible-Exposed-Infected-Recovered (SEIR) model which includes additional compartments namely the Traced, Isolation and Quarantine compartments (STEQIR). Such model compartmentalized the total population in Malaysia. In order to assist policymakers in making decision, the modelers will refer to the force of infection parameter in the model.

The detail of the model can be found at Gill, B.S.; Jayaraj, V.J.; Singh, S.; Mohd Ghazali, S.; Cheong, Y.L.; Md Iderus, N.H.; Sundram, B.M.; Aris, T.B.; Mohd Ibrahim, H.; Hong, B.H.; Labadin, J. Modelling the Effectiveness of Epidemic Control Measures in Preventing the Transmission of COVID-19 in Malaysia. Int. J. Environ. Res. Public Health 2020, 17, 5509.

FEATURED PROJECTS

Sustainable Business Development for the Songket and Keringkam Heritage Community

Project Leaders: Dr Dayang Hanani Abang Ibrahim & Dr Nadianatra Musa, Members: AP Dr Johari Abdullah, AP Dr Noor Alamshah Bolhassan, AP Dr Halikul Lenando, AP Dr Musdi Shanat, AP Dr Affendy Arip, Dr Irwandi Hipni Mohamad Hipiny, Puan Noraziah Abdul Wahab, Pn Dayang Kartini Abang Ibrahim.

This project is based on a community grant from Unit Peneraju Agenda Bumiputera (TERAJU) in the Prime Minister's Department, that aims to develop a sustainable model to support the conservation, preservation and commercialisation of songket and keringkam, two of Sarawak's heritage products.

To achieve a sustainable business development, an ecosystem for Branding Heritage Product and Service and Commercialization will be adopted and implemented in the songket and keringkam heritage community.

The ecosystem comprises of components of business development activities, interacting with each other towards achieving a holistic development. This ecosystem is essential to preserve and conserve cultural heritage, improve quality of life, develop the heritage community – ultimately leading to elevating the socio-economic status, lives and livelihood of the local communities in Sarawak.

Visit by Her Majesty Seri Paduka Baginda The Raja Permaisuri Agong Tunku Hajah Azizah Aminah Maimunah Iskandariah to Lembaran Emas Songket dan Keringkam Sarawak at Dewan Undangan Negeri Sarawak, and the Ranee Museum, Kuching.

FEATURED PROJECTS

Makerspace @ UNIMAS

Team: Dr Sze San Nah, *AP Dr Johari Abdullah, Dr Sarah Flora Samson Juan, Dr Lau Sei Ping, Lee Jun Choi, Nurul Zawiyah Mohamad, Wee Bui Lin, Norazian Mohamad Hamdan, Jennifer Fiona Wilfred Busu*

Makerspace @ UNIMAS is an open lab for students and staff to get creative and build their own digital products using various tools that are currently available in the lab. There are several stations for soldering work, 3D printing, programming and drone technology demonstration in the lab. The lab has been established in early 2018 to initiate "the maker movement", a social movement to revolutionize a global maker culture where people solve problems using modern tools and technology.

3D printer maintenance session with Dr Lau Sei Ping.

To date, the lab has been used as a space for faculty students who participate in hackathons and maker challenge to brainstorm with their teammates and create solutions, and as a learning centre for professionals to develop their IT skills.

Makerspace @ UNIMAS has also conducted community programs with school students and the public to share makers' ideas and innovations. Recently, to assist efforts in combating COVID-19 pandemic outbreak, three faculty members worked at Makerspace @ UNIMAS during the movement control order period, to produce face shields using the 3D printers at the lab.

These face shields are produced to support and protect frontliners, and are handed over to UNIMAS frontliners, UNIMAS Institute of Health and Community Medicine, Pusat Jantung Sarawak and Sarawak General Hospital.

Activities in the Makerspace @ UNIMAS lab during Faculty Open Day in 2019.

Drawing session using 3D pen for primary school children.
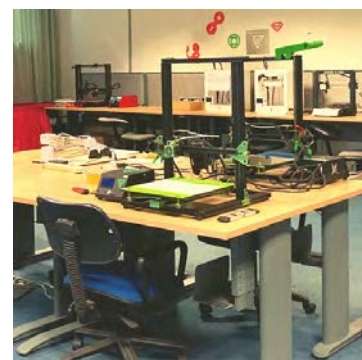
Makerspace facilities - 3D printing and IoT stations.

Makerspace facilities - 3D printing and IoT stations.

Gold medal winners at InTEX2019.

ACHIEVEMENTS

Students Farhaan Iqbal, Teshinia Phang and Bat Sabawi won 2nd prize at Hackwknd IDECS2019 with their project titled Queue Monitoring System.

Lim Yi Swen won consolation prize in the Google Technology Track at Innovate Malaysia Design Competition 2019 for her project Assisted Navigation for Blind People using Deep Learning.

Awards: Gold Award & Special Award Category: Digital Award, Sarawak Invention, Innovation & Design Expo 2019 (SIIDEx 2019) | Project Title: iPeriodic Interactive Periodic Table Mobile App | Project Team: Dr Suriati Khartini Jali, Nurfauza Jali & Syamin Natasya Zainuddin.

International University Carnival on E-Learning (IUCEL2019)

GOLD

- Chai Soo See, Goh Kok Luong - FLOOD : An Immersive Learning Environment for Disaster Preparedness.
- Sze San Nah - Digital Makerspace An Informal Learning Space to Nurture Innovation.

SILVER

- Jacey-Lynn Minoi - CreativeCulture: Learning Through Play.
- Emmy Dahliana Hossain, Johari Abdullah, Chuah Kee Man, Ang Tse Chwan, Noorhaslina Senin - ICT Competency MOOC: Pioneering Large Scale MOOC in Malaysia.
- Sze San Nah - Two-stage heuristic for primary school timetabling problem with combined-class consideration.
- Syahrul Nizam Junaini, Johari Abdullah, Yanti Rosmunie Bujang, Ahmad Hadinata Fauzi, Jonathan Sidi - We Love Your MOOC Sir: How to Design Fun and Fast Task-based Online Learning Activities.

BRONZE

- Nadianatra Musa, Dayang Hanani Abang Ibrahim, Johari Abdullah, Kartinah Zen, Halikul Lenando, Sara Flora Samson Juan, Mohamad Johan Ahmad Khiri, Suhaila Saee, Seleviawati Tarmizi, Abdul Rahman Mat, Cheah Wai Shiang, Fatihah Ramli, Jennifer Fiona Wilfred, Rosita Mohammed Othman, Mohamad Nazri Khairuddin Yap, Emmy Dahliana Hossain - Impactful Service Learning through Technology- A Reflection at FCSIT, UNIMAS.
- Yanti Rosmunie Bujang, Syahrul Nizam Junaini, Nurfauza Jali - Ethics in Digital Society.
- Nurul Zawiyah binti Mohamad - INSTAGRAM: Increasing learning engagement and interactivity through bite-sized learning 'gem'.

Teaching Excellence Awards for Semester 1 (20192020)
Immersive Learning Experience (Face-to-Face)
Winner: Nurfauza Jali

UNIMAS Teaching Excellence Award - Immersive Learning Experience (Face-to-Face) Category,
Semester 2 2018/19.
Winner: Jonathan Sidi

International Conference and Exposition on Inventions by Institutions of Higher Learning 2019 (PECIPTA'19)

Silver medals
AP Dr Dyg Nurfatimah Awg Iskandar
Automatic Classification of Left Ventricle (LV) Remodelling

Bronze medals
Dr Sze San Nah: eRaceColl
Dr Sze San Nah: Distressing Patient Waiting Time Reduction Through Big Data Predictive Algorithm

Students Mohammad Farhaan Iqbal and Khalif Amir Zakry won 1st runner up for their project, "Optishrimp: Behaviour Driven Autonomous & Sustainable Shrimp Farming System" at the **UniMAKER 2019**, held in Putrajaya.

Students Dhiyauddin Aiman Dzulkapli and Jacky Jong Jau Chu with their UniMAKER 2019 project posters, in Putrajaya.

Techstars Global Startup Weekend Kuching Women's Edition
20-22 Sept 2019
Winner Team: Wati Malik, Shahirah Jumain, and Ummi Syahdeena
Project: Heads-up Windscreen Smart Navigator

Researchers from various faculties and institutes put their efforts together in containing the spread of COVID-19. FCSIT researchers contributed **3D printed face shields.**

Seoul International Invention Fair 2019 (SIIF 2019)
COEX Convention Center, Seoul, South Korea, November 2019, Award: Silver, Project Title: Dr Sze San Nah,
Project Leader: Service to Establishing Digital Makerspace

Assoc. Prof. Dr. Johari Abdullah was one of the panellists at **Beyond Paradigm Summit 2019** in Kuching, July 2019.

EVENTS

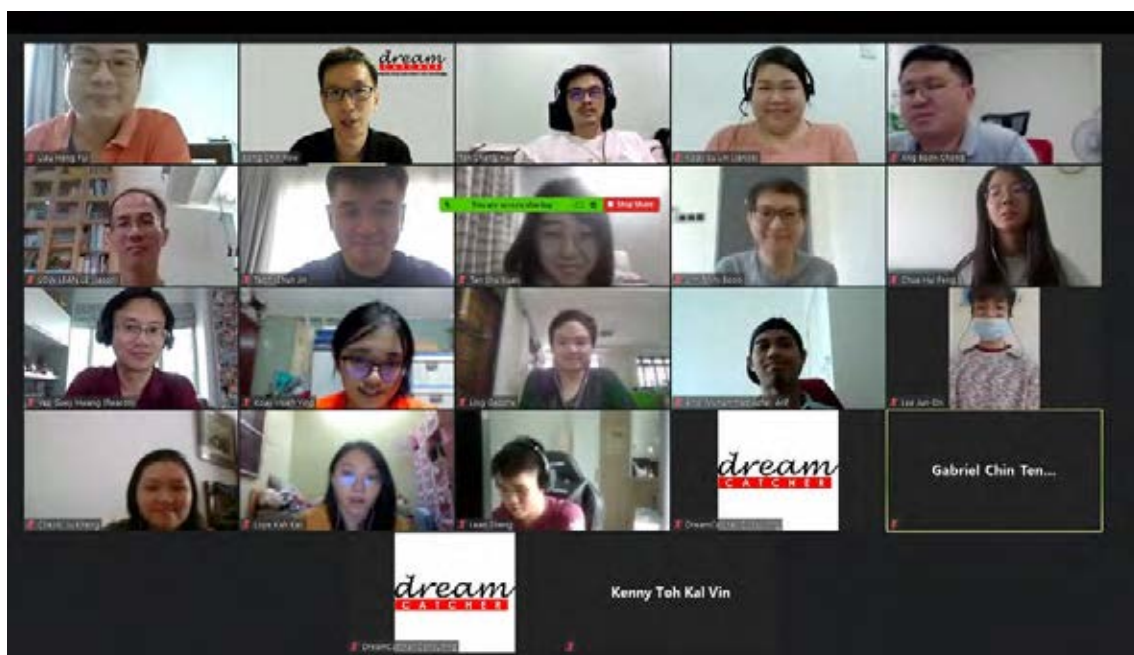**Big Data & Data Analytics for Islamic Information Centre Workshop**
August 2019, facilitated by AP Dr Johari Abdullah, AP Dr Nooralamshah Bolhassan, Dr Dayang Hanani and Dr Nadianatra Musa

PROCEL Training: Intro to Natural Language Processing
Trainer: Dr Bong Chih How, August 2020

11th International Conference on Information Technology in Asia (CITA`19)
16-17 July 2019, Kuching, Sarawak

Drone Education Program for Rural Primary Schools
8-9 November 2019
SJK Chung Hua Balingian, SJK Chung Hua Poi Yuk, SK St. Kevin
Mukah & Dalat, Sarawak

This is a collaboration program between the Malaysian Digital Economy Corporation (MDEC) and the University of Sarawak Sarawak (UNIMAS) in supporting government initiatives in Science, Technology, Engineering and Mathematics (STEM). This program aims to introduce drone technology to student and also to provide an opportunity for students to explore drone technology and applications in the industry.

Faculty Open Day
19-20 September 2019

Jonathan Sidi as an evaluator at **Festival Pameran Projek dan Inovasi,** Politeknik Kuching, September 2019

ICT for People with Disabilities (PwDs) Programme by FCSIT Makerspace Team
10 December 2019, House of Joy Kuching *(Persatuan OKU Kuching)*

Training for IPG Lecturers and Teachers for Computer Science Subject for Secondary Schools
August 2019, IPG Rajang, Sibu
Trainer: AP Dr Kartinah Zen

The Makersmeet 2019
Sarawak State Library, 2–3 November 2019

Prof Dr Narayanan Kulathu Ramaiyer's Inaugural Lecture
Title: Human versus Machine Intelligence: Staying Relevant in the
Upcoming Artificial Intelligence Era
18 December 2019

PROCEL Training: Introduction to Graphics Design for Housewives
HRDF fully-funded course under the Housewives Enhancement and Reactivate Talent Scheme (HEARTS)
17-28 August 2020, UNIMAS Business School
Conducted by Ts. Syahrul Nizam Junaini, certified HRDF Trainer

Training and Industrial Awareness (TRIA 2.0) 2019
11 November 2019, Organised by Ministry of Education, Science and Technological Research

First TRIZ Certified Practitioner Award in Borneo
15 October 2019

Applying TRIZ in Research
By Prof Dr Nooh Abu Bakar (UTM), August 2019

WorldSkills Malaysia Sarawak 2019 Competition
Borneo Convention Centre Kuching
9-13 Sept 2019
Judges for Web Design, IT Software Development, and Network categories

INTELLECTUAL PROPERTIES

Title	Researchers	Type
An Academic Advisory System and Method Thereof	Dr. Hamimah binti Ujir (I) AP Dr. Shanti Faridah Salleh (CI) Majina binti Sulaiman (CI)	Patent
UNIMAS Rehab Care	Dr. Stephanie Chua Hui Li (I) Yong Pei Yan (CI) AP Dr. Ehfa Bujang Safawi (CI)	Copyright
QueRakyat: Queuing Mobile Application for Patient	Dr. Sze San Nah (CI) AP Dr. Chiew Kang Leng (I)	Copyright
BiodivARsity: Augmented Reality Card Game for Learning Biodiversity	Ts. Syahrul Nizam Junaini (I) Noor Amirah S. Mohd Faudzi (CI)	Copyright
Kuching City Hash Run Management System Using Facial Recognition	AP Dr. Chiew Kang Leng (I) Tang Jin Hua (CI) Dr. Sze San Nah (CI) Nurul Zawiyah Mohamad (CI) Cik Wee Bui Lin (CI) Colin Tan Choon Lin (CI)	Copyright
Energy Saving and Safety Street Lighting System	Puan Nurfauza Jali (I) Dr. Suriati Khartini Jali (CI) Yii Sze Hang (CI)	Copyright
The process of building standard offline anti-phishing dataset for benchmarking	AP Dr. Chiew Kang Leng(I) Chang Ee Hung (CI) Colin Tan Choon Lin (CI) AP Dr. Johari Abdullah (CI)	Copyright
Digital Water Strider: A real-time spatial-temporal water quality monitoring buoy	Dr. Lau Sei Ping (I) AP Dr. Tan Chong Eng (CI) Kevin Ting Yin Xian (CI)	Copyright
HOPE: A Mobile Application for Stroke Patients	Dr. Mohamad Imran Bandan (I) Steffi Nuja Macmillan (CI)	Copyright
QueHos: Queue Management Application at Public Healthcare	Dr. Sze San Nah (I) AP Dr. Chiew Kang Leng (CI)	Copyright
Save Our Town: A Game Design for Raising Awareness on Water Pollution	Amelia Jati Robert Jupit (I) Audrey Jong Kiam Tze (CI)	Copyright
A Language Corpus Management System	Dr. Sarah Flora Samson Juan (I) Chan Yieng Yieng (CI) Dr. Suhaila Saee (CI) AP Dr. Fitri Suraya Mohamad (CI)	Copyright

Pre-school management information system	Dr. Cheah Wai Shiang (I)	Copyright
SPACEVENGARS: Exploring Our Solar System using Augmented Board Game	Ts. Syahrul Nizam Junaini (I) Nur Hazimah Abdul Hashim (I)	Copyright
Sistem Kehadiran Berdasarkan QR Code	Prof. Datu Mohd Fadzil Abd Rahman (I) AP Dr. Johari Abdullah (CI)	Copyright
Incoming WIP Prediction in Semiconductor Fab Using LSTM	AP Dr. Chiew Kang Leng (I) Tin Tze Chiang (CI) Dr. Sze San Nah (CI)	Copyright
Digital Makerspace Training Module	Dr. Sarah Flora Samson Juan (I) Dr. Suriati Khartini Jali (CI) Dr. Johari Abdullah (CI) Dr. Sze San Nah(CI) Dr. Lau Sei Ping (CI) Lee Jun Choi (CI) Nurul Zawiyah Mohamad (CI)	Copyright
Service of Establishing Digital Makerspace	Dr. Sze San Nah (I) Dr. Johari Abdullah (CI) Dr. Sarah Flora Samson Juan (CI) Nurul Zawiyah Mohamad (CI) Lee Jun Choi (CI)	Copyright
DeenCar: A Mobile Application for Car Maintenance	Emmy Dahliana Hossain (I) Muhamad Wazir Zainudin (I)	Copyright

I = Inventor, CI = Co-inventor

MOA & MOU

MoU exchange with Woodlands International School, witnessed by Assistant Minister of Education, Science and Technological Research Dr Annuar Rapa'ee (Image: The Borneo Post).

No. of local MoU: 14, No. of international MoU: 7

MoA Partners

1. CTCS Research Collaboration: UM & UNIMAS
2. 3u1i: KARUNA (Sarawak) Enterprise Sdn Bhd
3. 3u1i: Rajang Digital Solutions Sdn Bhd
4. Research Collaboration: UTM & UNIMAS

MoU Partners

1. Kuramae Services Sdn Bhd
2. Sarawak Information Systems Sdn Bhd
3. Pustaka Negeri Sarawak
4. AGOGO ASIA
5. Dev Sankriti Vishwavidyalaya
6. Qurtuba University of Science and Info. Technology
7. F-Secure Corporation (M) Sdn Bhd
8. Ketua Masyarakat dan Ketua Kaum N8 Satok
9. Tallinn University of Technology, Estonia
10. Peoplelogy Development Sdn Bhd
11. The Cambridge & Malaysia Education & Dev. Trust
12. CECOS University of IT & Emerging Sciences, Peshawar
13. Kasperskey Lab Singapore Pte Ltd
14. Knowledgecom Corporation Sdn Bhd
15. The Future Net Café (GIZMO ARENA)
16. Trienekens (SARAWAK) Sdn Bhd
17. Vrije Universitiet Amsterdam
18. Woodlands International School
19. Croesus IT Solutions Sdn Bhd
20. Lotus Farm Agritech Sdn Bhd
21. The Value Engineers B.V.

MoA signing and exchange with KARUNA (Sarawak) Enterprise Sdn Bhd represented by Marketing Director Law Cheng Hui.
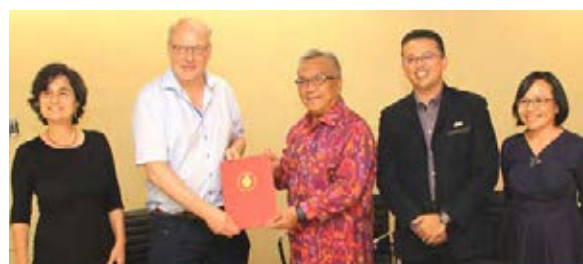
MoA signing ceremony with Vrije Universiteit Amsterdamn (VU Amsterdam), represented by Associate Professor Dr. Jaap Gordijn and by Ms Anna Bon.

MoU signing and exchange with Croesus IT Solutions director Richard Liau.

COMMUNITY ENGAGEMENT

Service Learning

Service Learning (SL) is a learning activity based on student experience in collaboration with the local community through various services which bring mutual benefits to both parties. Students have the opportunity to apply the knowledge they have learned in academic programs at universities to the real world environment and then reflect on the service experience when returning to university learning sessions.

The aim of Service Learning (SL) Program is to fulfill one of the High Impact Educational Practice (HIEPS) elements as outlined in the aspiration of the National Higher Education development. There are three main objectives of Service Learning (SL) Program:

1. For students to apply the theory studied at universities through local community activities.
2. To provide a mutually beneficial experience for students and local communities.
3. For students to reflect on the experience gained from community activities.

As of September 2020, more than 1,100 faculty students have been involved in 139 SL projects since 2016.

Feedback from students

"We get to learn new skills in order to be a better person in the future by practicing effective communication skills and building positive relationship wiht the community. Other than that, it is vital to acquire new skills as it is a demand in the work field." – Student, FCSIT

"I hope through this subject we can expand more to help the local communities in Sarawak to develop systems to overcome the problems that they are currently facing." – Student, FCSIT

Feedback from communities

"Being exposed more on the benefits of online payment, online businesses and promoting products through social media" - Entrepreneur

"Melalui pendedahan secara amali aplikasi telah membantu meningkatkan pengetahuan serta boleh digunakan dalam tugasan atau kerja saya pada masa hadapan" – Community member

Voter Tracking System (VTS) handing over ceremony at Kampung Sungai Bedil Besar, Kuching.

Service learning activities carried out by students at their respective communities.

ISITI

ISITI was established in April 2011, given its success with the eBario flagship project for bridging the digital divide. ISITI's mission is to generate, disseminate, apply, and preserve knowledge through innovative and multidisciplinary approaches to empower local indigenous communities to sustainably address their developmental needs in the wider social and economic contexts. With over 30 researchers from various faculties and centres in the University, ISITI conducts research and offers advisory, consultancy and training services in the niche areas of bridging the digital divide, socio-economic development, green technology, elearning, ehealth, and indigenous knowledge and cultural preservation.

For more information on how you can be a part of the ISITI journey, please contact ISITI Director, Prof Dr Narayanan Kulathu Ramaiyer (nara@unimas.my).

ISITI researchers worked together with researchers from Universidad Carlos III de Madrid, Spain on using MOOCs with the Single Mothers Association in Bario, Sarawak.

ISITI hosted students from Cornell University, United States of America, who attended their community-based research service-learning program in Long Lamai, a Penan village in upper Baram River in northern Sarawak.

7th eBorneo Knowledge Fair (eBKF7) 2019

This is a collaboration program between the Malaysian Digital Economy Corporation (MDEC) and the University of Sarawak Sarawak (UNIMAS) in supporting government initiatives in Science, Technology, Engineering and Mathematics (STEM). This program aims to introduce drone technology to student and also to provide an opportunity for students to explore drone technology and applications in the industry. The 7th eBorneo Knowledge Fair (eBKF7) 2019 was held in Ba'Kelalan, northern Sarawak, in October 2019. Established in 2007, the biennial event brings together researchers, officials, practitioners with the residents - all are considered participants who work together to identify the challenges faced by isolated rural communities and the opportunities for sustainable development. eBKF7 also included the community members from Kalimantan, Indonesia.

Radio Bario, a community radio service, serves the community within 50km radius of the eBario telecentre. ISITI researchers worked together to assist with the rectification of the radio studio's technical issues. The service is on air twice a day for 2 hours in the morning and evening, and can be found on FM94.00.

Technopreneurship, Innovation & Enterprise Development (TIED) and Community Opportunities & Needs Supported Through Networked Entrepreneurship, Innovation & Communication Technology Strategies (CONNECTS)

These projects were tasked by Sprintz Designs to ISITI, and leverage on the concept of social entrepreneurship and enterprise development for the benefit of society. The TIED project covers 18 sites from West Malaysia, with clustered sites in Johor Bahru, Negeri Sembilan and Perak, while the CONNECTS programmed covers 12 sites in East Malaysia, with clustered sites in Sibu and Kuching.

TPOA project handover from UNIMAS to Director General of Jabatan Kemajuan Orang Asli Malaysia (JAKOA) YBhg. Dato Ajis Sitin.

The Telecentre for Orang Asli (TPOA) project was shortlisted for the Technological Innovation of the Year Award at Times Higher Education (THE) Awards Asia 2019

The TPOA project, which was spearheaded by a team of ISITI researchers from multiple faculties and backgrounds of expertise, highlights the usage of technology at four Orang Asli sites in Kelantan and Pahang, and introduced both the Semai and Temiar Orang Asli tribes to multiple programmes designed for the Orang Asli such as training, tourism, agro-business, health, education, and documentation of indigenous knowledge.

The Launching of UNIMAS Ideal Campus Powered by TRIZ

This initiative is by ISITI and the University's Human Capital Development Unit (BPMI) to train 205 professional and management officers. In recognition of this, the Malaysia TRIZ Association has endorsed UNIMAS as the TRIZ Centre of Excellence in Product Innovation.

Various TRIZ workshops organized by ISITI

TOURISM INNOVATION CENTRE (TIC)

TIC, formally known as Center of Research for Image Analysis and Spatial Technologies (IMAST) was established in 2007 as one of the two research centres anchored at the Faculty. TIC provides technological expertise, services and support in the area of Tourism Innovation and Spatial Technologies. TIC combines the usage of AR, VR, AI, spatial data capturing technology, spatial analysis and modelling, 3D visualization and modelling, simulation, data analytics, IoT, and robots for e-Tourism, 3D and spatial modelling, medical images analysis, satellite images interpretation, spatial data acquisition tools, spatial data mining, environmental and natural disaster, disease control and spatial related problem, and agriculture-based management tools.

Contact: Prof Dr Wang Yin Chai, Director (ycwang@unimas.my)

3D Scanning and Modelling on Scenes

User training on aerial images acquisition by using unmanned aerial system

Aerial imaging trip

HERITAGE AND DIGITAL LABORATORY

The Heritage and Digital Laboratory, funded under the Sarawak Government's Old Kuching Smart Heritage (OKSHe) initiative, was established at the Faculty in March 2020. The Lab functions to conduct R&D and consultation for OKSHe projects, as well as a discussion and collaboration centre. OKSHe projects include Old Kuching Kampung Heritage Trail (6 sites), branding and commercialization of heritage products and services ecosystem, Kampung Heritage Cafeteria/Coffee House/Food Paradise, and Building Sarawak Songket and Keringkam Ecosystem and its Sustainability.

Through these projects, consultation provided, and facilities of the Lab, local entrepreneurs have been assisted to innovate, promote, and market the local products. The Lab, located at the Faculty's Level 1, Block B, has workstations for product packaging and labelling, a meeting area, lounge, and display sections for the local products such as food, textiles and handicrafts.

For more information, please contact Dr Dayang Hanani Abang Ibrahim (hananii@unimas.my) or Dr Nadianatra Musa (nadia@unimas.my).

Lounge area

Products display

Meeting area

Community engagement

Village Heritage Products launching ceremony at Mydin Supermarket

Official Opening of Songket and Keringkam Gallery

GAMIFICATION CENTRE

The Gamification Centre began its journey through the CreativeCulture project in 2018, funded under the Arts and Humanities Research Council (AHRC) and the Ministry of Higher Education Malaysia (MOHE) Newton-Ungku Omar (NUOF) Programme. The Centre is the first Gamification Centre in Malaysia.

We have established an innovative space, and a sustainable learning programme and services to allow an open collaboration in driving innovative solutions to speed up decision making, creativity, higher-order thinking, improve productivity, support business processes and communications. In promoting and diffusing innovation, our programme focuses on the potential of playful and gameful design thinking content and approaches for promoting anytime anywhere lifelong learning and for reshaping learning to better match the needs of the 21st century knowledge economies and open societies. This is in line with the vision of the Ministry of Education Malaysia to gamify sustainable thinking and learning in schools, which eventually contributes to the United Nation's SDGs and Digital Economy Agenda of the State of Sarawak. In UNIMAS, we have our very own innovative collaborative space – myCapsule space lab.

The myCapsule space lab was completed in 2018. The "Capsule" in myCapsule stands for gamifi**CA**tion and **P**lay in **S**TEAM (Science, Technology, Engineering, Arts, Mathematics) and **Cu**lture. It is a space uniquely designed to promote creative innovation, collaborative work, exploratory play and open learning. It is a rethinking space to meet the needs of learners of the 21st century.

The one-of-a-kind space in Sarawak has an area of 1,000 sq ft that can accommodate up to 80 participants. This human-centric space design is becoming more prevalent and it is quite relevant to our innate influence of thoughts, feelings and behaviours in enabling creativity and innovation with the values it brings and the aesthetic of the layout. This space together with the flexibility of the ergonomics and movable furniture enable collaborations and convergence of those with diverse backgrounds and interests in a shared space and allows ones to engage with a variety of activities. With the current age of technology, space is also integrated with relevant technologies, WIFI, presentation equipment and power sockets. This space mirrors values that scream openness, sustainability, collaboration, creativity and innovation.

For more information, please contact Gamification Centre Director, Dr Jacey Lynn Minoi (jacey@unimas.my).

Gamification Seminar (2018 – current)
Game design thinking training for more than 200 participants

CreativeCulture 2.0: A Blueprint for Remixing Play for Classroom Learning Dec 2018.
A gamification blueprint book for teachers.

Hand Sanitizer Foot Dispenser System March 2020 – current. HSFD systems were produced for medical frontliners at Hospital Kapit, Borneo Medical Centre (BMC), Poliklinik Jalan Masjid, and UNIMAS Clinic.

myCapsule Space (Established Sept 2018)
A fun and playful space for e-innovation, collaborative work, exploratory play and open learning. The "**Capsule**" stands for gamifi**CA**tion and **P**lay in **S**TEAM (Science, Technology, Engineering, Arts & Mathematics) and **Cu**lture.

PERTEKMA

Persatuan Teknologi Maklumat

Persatuan Teknologi Maklumat (PERTEKMA) is the faculty's undergraduate students association, registered under the University's Student Affairs and Alumni Division, on 1 November 1997. PERTEKMA was established to provide a platform for students and faculty members to interact effectively. Today, PERTEKMA has 14 portfolios designed to manage students' activities. All Faculty undergraduates are automatically members of PERTEKMA, and committee members are elected on an annual basis.

IT Week 2020 (7-12 March 2020) - IT Week is the annual event organized by PERTEKMA members. Activities during IT Week include exhibitions, e-Sports tournaments, bazaar, IoT workshop, IT talks, hosting visits by school children, and fun run.