AN INTERNATIONAL AWARD-WINNING INSTITUTION FOR SUSTAINABILITY

NEWSLETTER

Issues No. 10/2022 November 2022

EDITORIAL BOARD MEMBERS

Advisor:
- Assoc. Prof. Dr. Norsaremah Salleh

Chief Editor:
- Asst. Prof. Dr. Noor Azura Zakaria

Editors:
- Asst. Prof. Ts. Dr. Hafizah Mansor
- Asst. Prof. Ts. Dr. Dini Oktarina Dwi Handayani
- Asst. Prof. Dr. Elin Eliana Abdul Rahim
- Asst. Prof. Dr. Atikah Balqis Basri
- Asst. Prof. Dr. Nor Saadah Md Nor

Designer:
- Sr. Nurlaili Sanadi

TABLE OF CONTENTS

Article of the month	1
Achievements and Recognitions	4
Activity	9
Talk/Seminar	10
Publications and Copyright	11

Motivational Quote

"Mindset is everything. A good mindset will always be looking for all relevant and possible alternative opportunities. A growth mindset is able to sense the fundamental change in a situation and is also able to adjust to the change by initiating another solution that suits the latest data and trends better. It's not a cut-and-dry mentality"

- YBhg. Tan Sri Dr Mohd. Daud Bakar -

What are the main future opportunities in the IoT domain for Computer Science and Information System Prospects?

Asst. Prof. Ts. Dr. Ahmad Anwar Zainuddin
anwarzain@iium.edu.my

Many methods and frameworks are indeed being developed to address cloud-based modelling issues. As a result, now is the time to propose robust and flexible mechanisms for use in the Internet of Things (IoT) industry to overcome domain-specific challenges. This segment examines various readily accessible and easily customizable frameworks which are prevalent in the designed system and some recommended areas in IoT.

Overall, IoT is an invention which connects a diverse set of automated systems, platforms, interactive gadgets, and detectors. Furthermore, it makes use of quantum and nanotech to achieve previously inconceivable storage, sensors, and computing performance. Significant research studies were undertaken and are accessible online and in published materials in the form of scholarly publications and media releases to demonstrate the superior usefulness and scalability of IoT developments. It might be used like a preliminary step when developing fresh, inventive marketing concepts that consider privacy, verification, and compatibility. In recent years, some important IoT initiatives have taken control over the economy. Business, artificial intelligence, home automation, and smart transportation IoT projects clearly get a significant market share when compared to others. Therefore, IoT has the potential to offer greater chances to a variety of fields, including computer science, information systems, and business management.

Opportunities for students majoring in computer science and information systems to work in the internet of things can be broken down into the following categories as shown in Figure 1 and Figure 2:

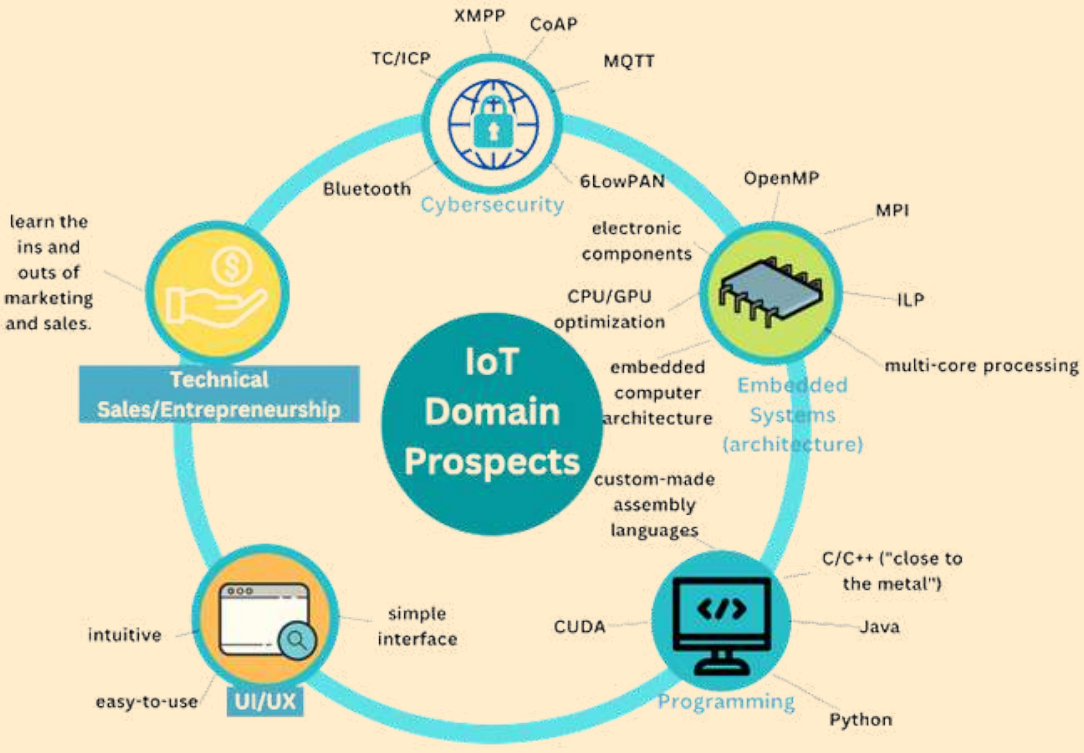


Figure 1: Opportunities for Computer Science and Information System students in the IoT domain prospects

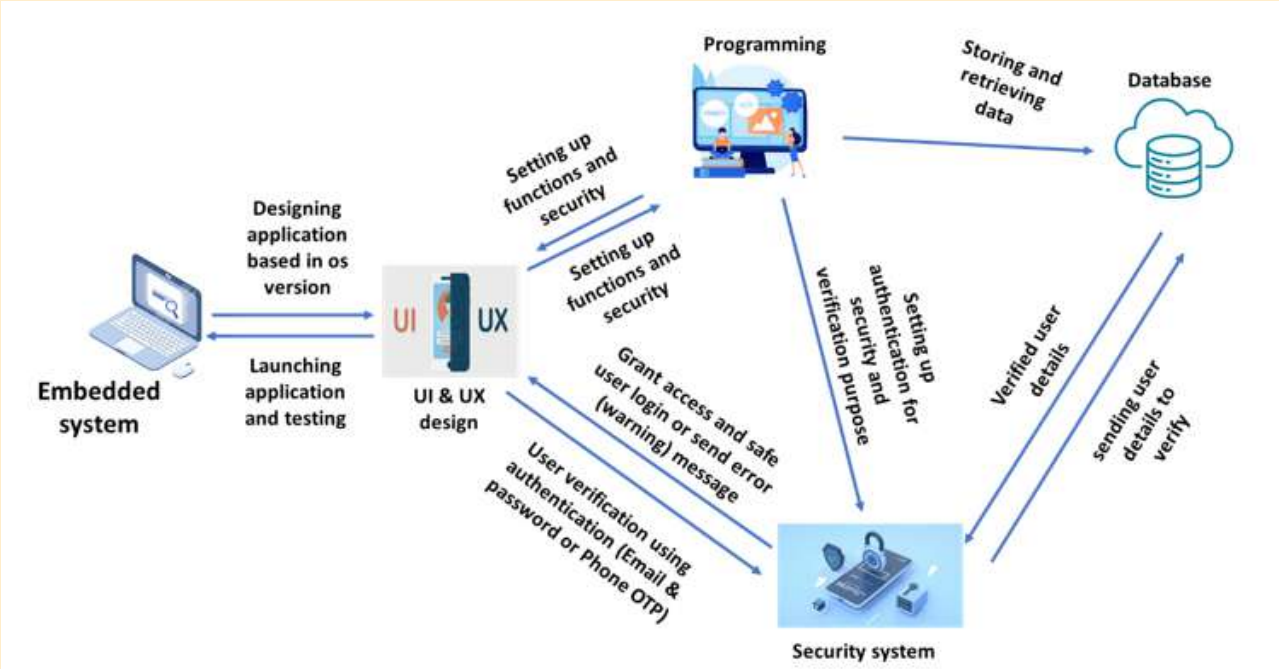


Figure 2: Overview of IoT Job Description

Cybersecurity: The connectivity between devices and how these devices can be exploited. For instance, the communications and networks. Different IoT devices will use different protocols such as XMPP, CoAP, MQTT, 6LowPAN, etc. This is on top of existing common protocols such as Bluetooth, TC/ICP, and so on, since the protocols needed depend on the environment the device is operated in.

Embedded Systems (architecture): Since many of these devices are small and have limitations in power/energy usage, there is a lot to learn. Experimenting with OpenMP (Open Multi-Processing), MPI (Message Passing Interface), ILP (Inductive Logic Programming), multi-core processing, etc., can be used to learn more about embedded computer architecture, CPU/GPU optimization, electronic components, and so on.

Programming: When it comes to different types of technology, having fluency in multiple languages is essential. When you start working on Internet of Things projects, you will quickly notice that typical embedded systems have limitations in terms of power and energy consumption, very limited memory, the absence of an operating system (OS), communications, and other areas. Keep an open mind when it comes to learning new programming languages, including C/C++ ("close to the metal"), Java, Python, CUDA, and even some custom-made assembly languages.

UI/UX: The user interfaces of many embedded systems are extremely lacking or non-existent. This may result in a poor user experience. When it comes to running simulations, many programs do not even have a graphical user interface (GUI), and even if they do, it is impossible to understand the nature of problems when they occur. For example, there is no specific error code to point out a specific hardware/software issue in the GUI.

Technical Sales/Entrepreneurship: If you want to be successful as a product designer who also runs their own business, you should learn the ins and outs of marketing and sales. You need to be able to provide answers to questions such as "how does this work?" or "can this tool accomplish that?" if you want to be successful in sales. The Internet of Things is still in the hype phase of the technology adoption life cycle at this point in time (since it has not matured).

There are many potential areas to focus in IoT. It really depends on what your interests and previous skills are related to. Primary problems will always be security, energy consumption, communication, interoperability and customer adoption rate. This is without adding points about microcontrollers (MCUs), artificial intelligence (AI) or robotics!

Congratulations
BATTLE OF HACKERS (BOH)

KICT Cyber Security students representing IIUM

IIUM Team - Top-10 Winning teams

Congratulations

MALAYSIA TECHNOLOGY EXPO (MTE) 2022, SUSTAINABLE DEVELOPMENT GOALS (SDG) INTERNATIONAL INNOVATION AWARDS

Congratulations

SUSTAINABLE SOCIAL BANK: Sustainable Livelihood

Assoc. Prof. Dr. Normi Sham Awang Abu Bakar

Asst. Prof. Dr.
Azlin Binti Nordin

Prof. Dato' Dr.
Norbik Bashah Bin Idris

Asst. Prof. Dr.
Norzariyah Binti Yahya

Asst. Prof. Dr.
Madihah Binti Sheikh Abdul Aziz

Congratulations

PENDEKAR SIBER:
A Novel Self-Empowerment Program for Young People to Combat Cyber Threats

Asst. Prof. Dr. Nurul Nuha Binti Abdul Molok

Asst. Prof. Ts. Dr.
Noor Hayani Binti Abd. Rahim

Asst. Prof. Ts. Dr.
Zahidah Binti Zulkifli

Prof. Dr.
Mohamed Ridza Wahiddin

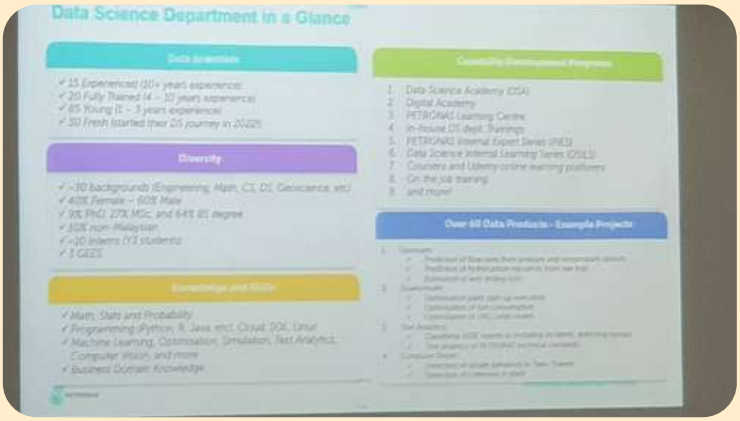
Sr. Noor Azian Binti Mohammad Ali

Asst. Prof. Dr.
Shuhaili Binti Talib

Congratulations for Completing Proposal Defense/Dissertation/Computing Project

CHESS IIUM
Digital Career with PETRONAS

Time	Agenda	PIC	Remarks
1000 - 1100	Networking session with KICT lecturers		
1100 -1110	Context setting & briefing by GD HR on digital careers in PETRONAS	M Nizam B Ahamad, Manager (HRM-Group Digital) Bernadene Simonne Wilfred, Executive (HRM-Group Digital)	
1110 - 1210	Panel presentation from Software Engineering, Data Science, & Data Platform Services moderated by Group Digital HR	Emie, Kian Em Yap (Software Engineer) Amalina A Rahman (Data Scientist) Moderator: Bernadene Simonne Wilfred (HRM-PETH)	
1210 - 1215	5 min Break		
1215 - 1220	Introduction to Career PETRONAS Digital Recruitment briefing by HR	M Nizam B Ahamad, Manager (HRM-Group Digital) Bernadene Simonne Wilfred, Executive (HRM-Group	
1230 - 1300	Q&A session with audience	M Nizam B Ahamad (HRM-PETH) Bernadene Simonne Wilfred (HRM-PETH) Roman Kvaska (DE-SWE/DIGITAL) Khairul Nazri Lokman (DE-PS/DIGITAL) Asaad Abdollahzadeh (DS/DIGITAL) Moderator: M Nizam B Ahamad (HRM-PETH)	Students can post their questions through pigeonhole (QR code) given during the session
1300 - 1400	Networking Lunch		



Talk/Seminar

Publications
(Submission in IREP for September 2022)

1. Hafizur Rahman, M. M. and Al Naeem, Mohammed Abdul Aziz and Abubakar, Adamu (2022) Threats from unintentional insiders: an assessment of an organization's readiness using machine learning. IEEE Access, 10. 110294 -110308. E-ISSN 2169-3536
2. Al Sousi, Amjad and Zulkifli, Zahidah (2022) Factors influencing effectiveness of e-learning systems among universities during the Covid-19 pandemic: a systematic literature review. Journal of Education and Social Sciences, 21 (1). pp. 22-31. ISSN 2289-9855
3. Ashraf, Arselan and Gunawan, Teddy Surya and Arifin, Fatchul and Kartiwi, Mira and Sophian, Ali and Habaebi, Mohamed Hadi (2022) On the audio-visual emotion recognition using convolutional neural networks and extreme learning machine. Indonesian Journal of Electrical Engineering and Informatics (IJEEI), 10 (3). pp. 684-697. E-ISSN 2089-3272
4. Attarbashi, Zainab and Abdulazeez E., Altaleb and Azana Hafizah Mohd, Aman and Aisha, Hassan Abdalla Hashim and Sebahattin, Eker (2022) A review of 5G technology: architecture and challenges. In: The 8th International Conference on Computing, Engineering and Design (ICCED 2022), 28-29 July 2022, Sukabumi, Indonesia. (In Press)
5. Abdul Jalil, Mohammad Khairi and Hassan, Raini (2022) The application of business intelligence and analytics to drive better business outcomes in BSSB: a small tissue paper converting establishment. International Journal on Perceptive and Cognitive Computing (IJPCC), 8 (2). pp. 43-55. E-ISSN 2462-229X
6. Jamian, Syahirah and Gunawan, Teddy Surya and Kartiwi, Mira and Ahmad, Robiah and Kadir, Kushairy and Nordin, Muhammad Noor (2022) Human activity and posture classification using smartphone sensors and Matlab mobile. In: 2022 IEEE International Instrumentation and Measurement Technology Conference, I2MTC 2022, 16-19 May 2022, Ottawa, Canada.
7. Yee, Ch'ng Ooi Jie and Attarbashi, Zainab and Katuk, Norliza (2022) Traffic management for emergency vehicles. International Journal of Undergraduate Research (IJUR), 3 (1). pp. 23-28. E-ISSN 2682-8189
8. Rafia, Tasnim and Mahmood Hasan, Tanveer and Hassan, Raini (2022) The effects of COVID-19 in global warming through the application of data science. International Journal on Perceptive and Cognitive Computing (IJPCC), 8 (1). pp. 65-72. E-ISSN 2462-229X