

CURRICULUM VITAE



1. PERSONAL INFORMATION

Name : DAYANG NORHAYATI ABANG JAWAWI

Citizenship : Malaysian

Date of birth: 1972

Marital status: Married

Office : Faculty of Computing,
Universiti Teknologi Malaysia,
81310 UTM Skudai, Johor, Malaysia

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2. ACADEMIC QUALIFICATIONS

- 2006 Doctor of Philosophy (Ph.D) in Computer Science, Department of Software Engineering, Universiti Teknologi Malaysia, Malaysia.
Thesis title: "A Framework for Component-Based Reuse for Autonomous Mobile Robot Software"
- 2000 Master of Science (M.Sc.) in Computer Science, Department of Software Engineering, Universiti Teknologi Malaysia, Malaysia.
Thesis title: "The Development of Real-Time Control Firmware for a Wall Climbing Robot - A Small-Scale Embedded Hard Real-Time System".
- 1996 Bachelor of Science (Hons) in Software Engineering, Computing and Management School, Sheffield Hallam University-Sheffield, United Kingdom.
- 1992 A Levels, Center for Preparation of Education Malaysia (PPP/ITM), Shah Alam, Selangor, Malaysia.

3. EMPLOYMENT

Jan 2021 - now	Professor School of Computing, Faculty of Engineering, Universiti Teknologi Malaysia, Skudai, Johor.
Nov 2012 – Dec 2020	Associate Professor, Department of Software Engineering, Faculty of Computing, Universiti Teknologi Malaysia, Skudai, Johor.
Nov 2008 – Oct 2012	Senior Lecturer, Department of Software Engineering, Faculty of Computer Science and Information Systems, Universiti Teknologi Malaysia, Skudai, Johor.
Sep 2000 – 2008	Lecturer, Department of Software Engineering, Faculty of Computer Science and Information Systems, Universiti Teknologi Malaysia, Skudai, Johor.
Jun 1997 – Sep 2000	Tutor, Department of Software Engineering, Faculty of Computer Science and Information Systems, Universiti Teknologi Malaysia, Skudai, Johor.
Jul 1994 – Aug 1995	Programmer, IBM Healthcare Solutions, Warwick, United Kingdom

4. RESPONSIBILITIES

April 2025-now	Adjunct Professor, University of Technology Sarawak.
July 2022-now	Chair UTM Research Ethics Committee (UTM REC), Department of Vice-Chancellor (Research and Innovation), UTM
Nov 2022-Oct 2025	Deputy Dean (Academic and Student Affairs) Faculty of Computing, UTM

July 2018-Oct 2022	Associate Chair (Academic and Student Development), School of Computing, Faculty of Engineering, UTM.
Feb 2017– June 2018	Deputy Dean (Academic and Student Development) Faculty of Computing, UTM
July 2015 – Jan 2017	Head of Software Engineering Research Group (SERG) Faculty of Computing, UTM
Nov 2009 – Feb 2015	Head of Software Engineering Department Faculty of Computing, UTM
July 2006 – Sept 2009	Computer Science Program by Research Coordinator (M.Sc and Ph.D) Faculty of Computer Science and Information Systems, UTM
Mar 2002 – Oct 2002	Deputy Coordinator I for MSc. IT Entrepreneur Program Faculty of Computer Science and Information Systems, UTM
2001 – Oct 2002	Coordinator for Department's Colloquium
Aug 2007 – 2008	Department of Software Engineering Faculty of Computer Science and Information Systems, UTM

5. TEACHING EXPERIENCE

5. 1. Postgraduate Courses

MECC 1113 Computation and Programming
MCSQ1103 Software Engineering Research Methodology
MCB1163 Hardware, Software & Creative Content
MCC1023 Advanced Data Structures and Algorithms
MCC1093 Advanced Software Engineering
MCT1223 Real-Time Systems
MCP1653 Real-Time Software Engineering
MCP0003 Computing Fundamentals

5. 1. Undergraduate Courses

DCP1123 Programming Technique II
DEU 1213 Digital Logic
DCP2043 Data Structures & Algorithms
SMM1262 Calculus
SCJ1013 Programming Technique I
SCK1223 Programming Technique II

SCJ1023 Programming Technique II
 SCK1233 Software Engineering
 SCP 3093 Software Engineering
 SCJ2013 Data Structures & Algorithms
 SCP2073 Basic Engineering Computing
 SCK2243 Data Structures & Algorithms
 SCK3293 Real-Time Software Engineering
 SCM 4423 Office Automation
 SCP4203 Software Quality Assurance
 SCJ4363 Software Project Management
 SCP4223 Software Engineering for Real-Time Systems

6. RESEARCH

6. 1. Research Areas

1. Software Engineering: Software Reuse, Software Requirement and Modelling, Software Quality and Testing, Embedded and Real-Time Software
2. Computing and Software Engineering Education

6. 2. Research Activities

Project Leader

1. Fundamental Research Grant Scheme (FRGS) Vot. 5F733 (RM 119,500), "Ontology-Based Learning Analytics Framework for Students' Digital Competencies Discovery.", Aug 2024-Jul 2027.
2. Fundamental Research (UTMFR) Vot. 08G67 (RM 58,490), "Time Series Forecasting Learning Outcome Model for Students' Competencies Prediction", Oct 2023-Sept 2025.
3. International Grant, Vot. 1U009 (RM 115000.00), "Reliable Topology Deployment Scheme of IoT Nodes Suitable for the Monitoring of Key Pollution Sources of Smogs", April 2023-Sept 2024.
4. Matching Grant (UTM-MG) Vot. 04M64 (RM 60,000.00), "A Semi-Supervised Framework for Image Air Pollution Monitoring Leveraging Simulated Abnormal Images and Classification Hyperplanes", April 2023-Sept 2024.
5. Fellow Research Grant, Vot. 00P27 (RM 63,540.00), "Key Technologies on High-Quality Event Detection through Big Data Mining in Industrial Cyber-Physical Systems", Jul 2022-June 2023.
6. Contract Research-Double Tax Deduction (CR-DTD) PY/2020/04451 (RM46,000), "A Study on Business Process Improvement for the Department of Justice Syariah Court of Malaysia, Johor", Jul 2020-June 2021.

7. UTM High Impact Research Grant (UTMHR) Vot. 08G67 (RM128,000), "Adaptive Learning Framework Using Educational Robotics for Computational Thinking Education", Jan 2020-Dec 2022.
8. Fundamental Research Grant Scheme (FRGS) Vot. 5F117 (RM70,500), "A New String Metric to support Effective Test Case Prioritization incorporating traceability mechanisms", Jan 2019-Spet 2021.
9. Transdisciplinary Research Grant (TDR) Vot 06G25 (RM240,000) "Innovation Platforms and Digital Healthcare for Patient Engagement and Assessment of Care", Dec 2018 – July 2021.
10. Research University Grant (GUP) Vot 13H63 (RM50,000) "Domain Analysis Software Product Line Model with Pedagogical for Educational Robotics", July 2016 – June 2018.
11. Others Grant (KEJORA) Vot 4B196 (RM80,000), "Kreativiti Dan Inovasi Melalui Pengaturcaraan Liga Robotik iCare UTM-KEJORA: Kemahiran Penyelesaian Masalah", Jun 2015 – Mei 2017.
12. Research University Grant (GUP) Vot 09H58 (RM35,000) "Development of Agile Transition Model for Non-Agile It Organizations", May 2015 – October 2016.
13. ScienceFund (MOSTI) Vot 4S113 (RM162,000), "End-To-End Cohesive Approach for Agile Software Development in Cloud Computing Environment", March 2015 - February 2017.
14. Others Grant (KEJORA) Vot 4B169 (RM22,035), "iCARE Pengaturcaraan ROBOT-LIGA KEJORA", September 2014 – February 2015.
15. Research University Grant (GUP), Vot 05H75 (RM80,000), "A Component-Based Mobile Robotics Application Toolbox for Teaching Programming Skill", April 2014 – March 2016.
16. ScienceFund 01-01-06-SF1111, Vot 4S064 (RM163,840), "Component-based Software Engineering Approach for Automated Embedded Precision Farming Systems", March 2013 - February 2015.
17. Research University Grant (GUP) (RM149,000), "Component-Based Methodology for Embedded Real-Time Software Development of Robotic Wheelchair Systems", April 2011 – March 2013.
18. Key Focus area, "To Study on How to Write High Impact Proposal and Development Proposals and Identify Source of Funds for Engineering", May 2011-July 2011.
19. Fundamental Research Grant Scheme (FRGS) Vot. 3F369 @ VOT 78431 (RM50,000), "A scheduling analysis framework for predicting the weakly hard real-time tasks performance", August 2009-August 2011.
20. ScienceFund Vot. 3S210 @ VOT 79214 (RM199,500), "Tools for Component-Oriented Programming of Embedded Real-Time Software", September 2007-Feb 2009.
21. ScienceFund Vot.3S089 @ VOT 79090 (RM185,000), "Framework for Component-Based Software Engineering of Embedded Software in Resource Constraints Real-Time Systems", December 2006-September 2008.

22. Fundamental Research Grant Scheme (FRGS) Vot.3F093 @ VOT 78094 (Seed Money – RM10,000), “A Generative Reuse Approach for Component-Based Software Engineering”, February 2007 – January 2009.
23. SLAB, PHD Research Project, “A Framework for Component-Based Reuse for Autonomous Mobile Robot Software”, Robot Systems, Nov 2002 – 2005.
24. UPP-UTM VOT 71848 (RM20,000), “Experimental Evaluation of Hybrid Software Engineering Methodology for Embedded Firmware Development on Intelligence Mobile Robot”, Jun 2002-September 2003.
25. UTM, Master Research Project, “The Development of Real-Time Control Firmware for A Wall Climbing Robot - A Small-Scale Embedded Hard Real-Time System”, May 1998 - September 2000.

Project Member

1. Fundamental Research Grant Scheme (FRGS) Vot 5F475 (RM99000) “Self Adaptive Service Discovery Theoretical Framework for Dynamic Mobile Environment”. Sep 2021-Sept 2024.
2. Encouragement Research (UTMER) Vot 31J09 (RM 60000) “A New Segmentation And Localization Method for Improving IRIS Recognition in Less Cooperative Environments”. Oct 2022-31 Nov 2024.
3. Contract Research-Double Tax Deduction (CR-DTD) Vot 4C473 (RM343,460) “Software Testing and Software Maintenance of Johor State Legislative Assembly Management Information System (e-ADUN)”. 1 February 2021-31 March 2024.
4. Networking External Grant, Vot 4X764 (RM56,000), “An Aspect-Oriented Model-Driven Code Generation Approach for Improving Reusability and Maintainability ”. Dec 2021-Dec 2022.
5. UTM Encouragement Research, Vot 19J54 (RM56,000), “A New Agility Hybrid Model for Secured IoT-Based Healthcare Platform”. 1 October 2020-30 September 2022.
6. Fundamental Research Grant Scheme (FRGS), Vot 5F482 (RM63,000), “A Hybrid GMDH - Artificial Bee Colony Method for High Accuracy Software Effort Estimation”. 7 September 2021-6 September 2023.
7. Contract Research-Double Tax Deduction (CR-DTD) Vot 4C456 (RM252640), “Independent Validation and Verification (IV & V) Maintenance Testing of Small and Medium Enterprise High Impact Programme 1 (Sme Hip 1) Integration Project”. 1 January 2021-30 June 2022.
8. UTM Encouragement Research, Vot 19J69 (RM56,000), “The Enhancement of Multifactor Weighted Approach for Event Sequence Test Cases”. 1 October 2020-30 September 2022.
9. Fundamental Research Grant Scheme (FRGS), Vot 5F475 (RM99,000), “Self Adaptive Service Discovery Theoretical Framework for Dynamic Mobile Environment”. 7 September 2021-6 September 2024.
10. Contract Research-Double Tax Deduction (CR-DTD) Vot 4C379 (RM23,000), “A Study on Business Process for Johor Water Regulatory Agency (BAKAJ)”. Jul 2020- June 2021.

11. UTM Transdisciplinary Research Grant (UTM-TDR), Vot 05G20 (RM80,000), "UTM-TDR 7.2 (T1): Innovation Communication for Non-Contact Heart Monitoring Using Electromagnetic Wave". 1 December 2018-31 May 2021.
12. UTM Transdisciplinary Research Grant (UTM-TDR), Vot 05G21 (RM40,000), "UTM-TDR 7.3 (T2): Innovation Assessment for Psychiatric Patients Using Technology-Driven". 1 December 2018-31 May 2021.
13. Contract Research-Double Tax Deduction (CR-DTD) Vot 4C193 (RM60,000), "Microservices-Oriented Application for Hospital Management System". May 2018-May 2019.
14. Contract Research-Double Tax Deduction (CR-DTD) Vot 4C317 (RM30,000), "IoT-Based Queueing Management System". Dec 2019-Dec 2022.
15. Prototype Development Research Grant Scheme (PRGS) Vot 4L709 (RM82,680), "GamBot: Educational Game Mobile RObot for promoting hypothetico-creative reasoning among students". Dec 2019-Feb 2022.
16. UTM Fundamental Research (UTMFR) Vot 21H04 (RM70,000), "ALARM: Learning Analytics Framework to Support Self-Regulated Learning Strategies in Massive Open Online Courses (MOOC) in Reducing Dropout". Jan 2020-June 2022.
17. Others (OTR) Vot 4B487 (RM50,000), "Agola Robotic Software Development". Dec 2019-June 2020.
18. UTM-Encouragement-Research (UTMER) Vot 18J36 (RM30,000), "Quality Driven Approach for Product Line Architecture Customization in Patient Navigation Program Software Product Line". Nov 2019-April 2022.
19. Industry-International Incentive Grant (IIIG) Vot 01M60 (RM20,000) "Integrated Architecture Pattern for Healthcare Domain Using Microservices-Architecture". June 2019 – Nov 2021.
20. Industry-International Incentive Grant (IIIG) Vot 01M55 (RM20,000) "The Design of A Service Oriented Architecture (SoA) For Integration Of Various Hospital Management System Modules". June 2019 – Nov 2021.
21. Research University Grant (GUP) Vot 15J16 (RM20,00), "An Enhanced Software Effort Estimation Using Machine Learning for Big Data Software Development". Feb 2018-May 2019.
22. Research University Grant (GUP) Vot 16H51 (RM40,00), "Predictive Model Using Climate Variables for Prediction of Dengue Incidence in Malaysia". Jul 2017-June 2019.
23. Research University Grant (GUP) Vot 16H73 (RM40,00), "Requirement Analysis Process using Role-based Goal Modeling". July 2017-June 2019.
24. Fundamental Research Grant Scheme (FRGS) Vot 4F836 (RM50,900), "A New Reliability Prediction Model by The Combination of Non-Homogenous Poisson Process and an Artificial Neural Network Based-on Information Fusion Technique", August 2016 - January 2018.
25. Research University Grant (GUP) Vot 15H44 (RM40,000) "Efficient Regression and Prioritization Testing Technique for Educational Technology Software Product Line", October 2016 – September 2018.
26. Others Grant (KEJORA) Vot 4B195 (RM171,700), "Model Perkongsian Ilmu Ke Arah Kelestarian Modal Insan Luar Bandar (KAMIL) Melalui Centre For Advancement in

- Rural Education Informatics (iCARE) UTM-KEJORA: iCare My Aim & iCare My English”, June 2015 – May 2017.
27. Research University Grant (GUP) Vot 11H86 (RM50,000) “Information Fusion of Software Reliability Prediction Model and Meta-Heuristic Approaches for Real Time Embedded Systems”, November 2015 – November 2017.
 28. Others, Vot 4B225 (RM20,000), “Centre for Advancement In Rural Education Informatics (ICARE): Peningkatan Program Berasaskan Kajian Awal”. 1 Dec 2015-30 November 2016.
 29. Others Grant (Gates IT Solution Sdn Bhd) Vot 4C083 (RM13,000) “Software Reliability Prediction Accuracy Improvement Using Meta-Heuristic Optimization Techniques”, September 2015 – August 2016.
 30. Others Grant (KEJORA) Vot 4B170 (RM21,450), “Centre for Advancement in Rural Education Informatics: iCARE My English Programme”, September 2014 – February 2015.
 31. Research University Grant (GUP) Vot 01K19 (RM20,000) “A Model-Based Methodology for Resilience Analysis for System Reliability Estimation”, October 2014 – September 2015.
 32. Research University Grant (Flagship) Vot 01G86 (RM50,000), “Web Services for The Integration of Heterogeneous Community-Centric Commuting Applications”, April 2014 – March 2015.
 33. Research University Grant (GUP) Vot 05H83 (RM38,000) “A New Cloud-Based Mobile Web Service Discovery Framework”, April 2014 – March 2016.
 34. Dana Pembangunan Pengajaran (UTMP) Vot 4J142 (RM20,000) “An Integrated Framework for Massive Open Online Courses (MOOCs) in UTM”. July 2014-June 2016.
 35. Fundamental Research Grant Scheme (FRGS) Vot 4F303 (RM115,000), “An Analytical Model for Reliability Estimation Using Integrated Tasks and Resources”, December 2013 - December 2015.
 36. Fundamental Research Grant Scheme (FRGS) Vot 4F315 (RM73,000) “Agile Process-based Functional Requirements Change Impact Traceability Model”, December 2013 - June 2015.
 37. Fundamental Research Grant Scheme (FRGS) Vot 4F165 (RM56,000) “Adaptive Mobile Web Service Discovery Model”, April 2013 – March 2015.
 38. Research University Grant (GUP) Vot 08J20 (RM32,000) “Simplifying technologies for the disadvantage groups”, December 2012 - December 2013.
 39. Others Grant (KEJORA) Vot 4B059 (RM119,049), “Ke Arah Kelestarian Pembangunan Pendidikan Luar Bandar Melalui Lembaga Kemajuan Johor Tenggara (Kejora) Dan Centre For Advancement in Rural Education Informatics (iCare)”, March 2012 – April 2013.
 40. Research University Grant (GUP) Vot 02J78 (RM40,000), “HCI and SE Integration: analyzing the emphasis of usability in the software engineering syllabus at the academic institutions in Malaysia”. April 2011-July 2012.
 41. Research University Grant (GUP) Vot 00J37 (RM40,000), “Semantic Service Discovery Framework in Pervasive Computing”, May 2011 – April 2012.

42. Research University Grant (GUP) Vot 3F443 (RM40,000), "HCI and SE Integration: analyzing the emphasis of usability in the software engineering syllabus at the academic institutions in Malaysia", March 2011 – March 2012
43. Research University Grant (GUP) Vot 03J23 (RM50,000), "A Modeling Approach for Integrating Variability at Requirements and Architectural Level in Software Product Line", April 2011 – March 2012
44. Key Focus area, Research and Innovation UTM, "To Study on How to Write High Impact Proposal and Development Proposals and Identify Source of Funds for Non-Engineering", May 2011 - July 2011.
45. ScienceFund Vot 79271 (RM186,200), "Design Framework of Multi Agent Software Based on Patterns", February 2008 - August 2009.
46. ScienceFund 01-01-06-SF0033 Vot 79104 (RM140,000), "Development and Evaluation of Reusable RFID Software Components", February December 2006 - October 2008.
47. ScienceFund 01-01-06-SF0033 (RM281,600), "The Development of a Tool using Bayesian Network Technique for Constructing Gene Network from Microarray Gene Expression Data", September 2007-Feb 2009.
48. IRPA VOT74040 (RM280,000), "Development of Neural Network Assisted Industrial QID Controllers Auto-Tuner", February 2002 – December 2004.
49. UPP-UTM VOT 71849 (RM18,000), "The Use of Formal Methods for Embedded Real-Time System", Jun 2002-September 2003.
50. UPP-UTM VOT 71446, "Software Engineering Methodology for Modeling Complex Real-Time System", 2000 - 2001.

6. 3. Intellectual Property

Pattern

1. A new web engineering method to develop multi-web application features in agile lifecycle, Filing number: PI 2018 001677 (Filing).
2. Component Based Analysis Patterns for Autonomous Mobile Robot (AMR) Software Development, Filing number: PI 2009 7025 (Granted).
3. An Agent Based Smart Wheelchair System Design Framework, Filing number: PI 2010 003724 (Filing).
4. A Method of Modeling Component Based Analysis and Design, Filing number: PI 2010 700051 (Granted).
5. Agent-oriented multi robot system, Universiti Teknologi Malaysia, Filing number: PI2008 4709 (Filing).

Copyright

1. Copyright (IP/CR/02574) – Microcredential UTM - Modul pemikiran komputasional untuk penyelesaian masalah menggunakan pengaturcaraan robotik.
2. Copyright (IP/CR/02573) – [UTM Micro-Credential] - Irul and Ira Animated Characters.

3. Copyright (IP/CR/02394) – [UTM Micro-Credential] – Video Animasi Bagi Pemikiran Komputasional Untuk Penyelesaian Masalah Menggunakan Pengaturcaraan Robotik.
4. Copyright (Ref. IP/CR/2016/2064) – A Questionnaire for Undergraduates Reflection on Generic Skills in RoboKar Co-Curricular Service Learning Projects.
5. Copyright LY2018006364 (Ref. IP/CR/2016/2054) – Survey of Acceptance for Architecture Design Decision Making Process in Autonomous Mobile Robots.
6. Copyright LY 2018006420 (Ref. IP/CR/2017/0932) – Educational Robotics Feature Model.
7. Copyright 1JLD104/27.13/1JLD120 (74) (Ref. IP/CR/2016/0433) – Performability Failure Awareness Behaviour Meta-Model.
8. Copyright 1JLD104 (4) – ROBOTAR and ROBOKAR Library Support Routines.
9. Copyright 1JLD104 (20) (IP/CR/2016/0433) – Modul Pengajaran Pengaturcaraan Robot dan Robokar.
10. Copyright (IP/CP/2013/3529) – A Reliability Estimation Model using Integrated Tasks And Resources.
11. Copyright (IP/CP/2013/3529) – Service Discovery and Selection Algorithm.
12. Copyright 1JLD48 (20) (Ref. IP/CP/2013/3676) – Code Generation Implementation Steps for Embedded Real-Time System Development.
13. Copyright (Ref. IP/CP/2012/3174-3188) – Teachin Material fro Data Structure and Algorithm.
14. Copyright 157950 (Ref. IP/CP/2008/1297) - Software Design Components for Behavior and Subsumption of Autonomous Mobile Robot Systems.
15. Copyright 157948 (Ref. IP/CP/2008/1296) - Software Design Components for Input-Output and Sensor of Autonomous Mobile Robot Systems.
16. Copyright 157943 (Ref. IP/CP/2008/1295) - Software Design Components for Motor Control of Autonomous Mobile Robot Systems.
17. Copyright 157953 (Ref. IP/CP/2008/1298) - Pengenalan Mudah Pengaturcaraan C.
18. Programming Technique I (C++) English-Malay-Lab Module, Filing number: TPI154106.
19. Programming Technique II (C++) English-Malay-Lab Module, Filing number: TPII154113.

7. PUBLICATIONS

7.1. Book and Module

Book

1. Rabatul Aduni Sulaiman, Dayang Norhayati Abang Jawawi & Shahliza Abd Halim, "Cost-Effectiveness Measures for Software Product Line Testing", Penerbit UTM, 2023. ISBN: 978-983-52-1955-9
2. Adila Firdaus Arbain, Dayang Norhayati Abang Jawawi, Imran Ghani, Wan Mohd Nasir Wan Kadir, "Requirements Traceability in Agile Software Development", Penerbit UTM, 2021.

3. Dayang Norhayati Abang Jawawi, Rosbi Mamat, "Teknik Membina Atur Cara dengan Bahasa C", Penerbit UTM, 2018. (Anugerah Citra Karisma UTM Penulisan Buku Asli 2019)
4. Dayang Norhayati Abang Jawawi, Radziah Mohamad, Noraniah Mohd. Yassin, Norazah Yusof, Zalmiyah Zakaria "Pengaturcaraan Berstruktur Menggunakan C++", Penerbit UTM, 2016. (Anugerah Buku Negara 2017, Kategori Pengajian Tinggi, Buku Sains dan Teknologi)
5. Vahid Khatibi. B. and Dayang Norhayati Abang Jawawi, "Software Development Effort Estimation", LAP LAMBERT Academic Publishing, ISBN 978-3-8473-1069-3, 2012.
6. Nor Bahiah Hj Ahmad, Dayang Norhayati Abang Jawawi, Norazah Yusof, Zuraini Ali Shah, Azah Kamilah Hj Muda, Shahliza Abd Halim, Ismail Mat Amin and Rozlina Mohamad, "Struktur Data & Algoritma Menggunakan C++", Penerbit UTM, 2005.
7. Safaai Deris, Paridah Samsuri, Dayang Norhayati Abang Jawawi, Mohd Yazid bin Idris and Rozlina Binti Mohamed, "Study Guide for Software Engineering – A Practitioner's Approach 5th edition by Roger S. Pressman", ACE McGraw Hill, 2003.

Teaching Modules

1. Norbahiah Ahmad, Dayang Norhayati Abang Jawawi and Zalmiyah Zakaria, "Data Structures & Algorithms", School of Computing, Faculty of Engineering, Universiti Teknologi Malaysia, 2018.
2. Radziah Mohammad, Zalmiyah Zakaria, Norazah Yusof, Noraniah Mohd Yassin and Dayang Norhayati Abang Jawawi, and "Lab Book – Programming Technique II C++", Fourth Edition, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2015.
3. Noraniah Mohd Yassin, Dayang Norhayati Abang Jawawi, Zalmiyah Zakaria, Radziah Mohammad and Norazah Yusof, "Lab Book – Programming Technique I C++", Sixth Edition, Faculty of Computing, Universiti Teknologi Malaysia, 2015.
4. Norbahiah Ahmad, Dayang Norhayati Abang Jawawi, and Zalmiyah Zakaria, "Data Structures & Algorithms", Third Edition, Faculty of Computing, Universiti Teknologi Malaysia, 2014.
5. Norazah Yusof, Noraniah Mohd Yassin, Dayang Norhayati Abang Jawawi, Radziah Mohammad and Paridah Samsuri, "Lab Book – Programming Technique I C++", Fifth Edition, Faculty of Computing, Universiti Teknologi Malaysia, 2013.
6. Norbahiah Ahmad, Dayang Norhayati Abang Jawawi, and Zalmiyah Zakaria, "Data Structures & Algorithms", Second Edition, Fakulti Sains Komputer dan Sistem Maklumat, Universiti Teknologi Malaysia, 2012.
7. Naomie Salim, Siti Mariyam Hj Shamsuddin, Safaai Deris, Rose Alinda Alias, Subariah Ibrahim, Roselina Sallehuddin, Siti Zaiton Mohd Hashim, Azizah A. Rahman, Dayang Norhayati Abang Jawawi, Nor Zairah Abdul Rahim, and Juhana Salim (UKM), "Handbook of Research Methods in Computing", First Edition,

Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2010.

8. Norbahiah Ahmad, Dayang Norhayati Abang Jawawi, Zalmiyah Zakaria, and Aida Ali, "Data Structures & Algorithms", First Edition, Fakulti Sains Komputer dan Sistem Maklumat, Universiti Teknologi Malaysia, 2010.
9. Masitah Ghazali and Dayang Norhayati Abang Jawawi, "Basic Programming C", First Edition, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2010.
10. Masitah Ghazali and Dayang Norhayati Abang Jawawi, "Lab Book – C Programming Techniques", Department of Software Engineering, 2010.
11. Norazah Yusof, Dayang Norhayati Abang Jawawi, Radziah Mohammad, Noraniah Mohd Yassin, and Zalmiyah Zakaria, "Lab Book – Programming Technique II C++", Third Edition, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2010.
12. Norazah Yusof, Dayang Norhayati Abang Jawawi, Noraniah Mohd Yassin, Radziah Mohammad and Paridah Samsuri, "Lab Book – Programming Technique I C++", Fourth Edition, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2010.
13. Norazah Yusof, Dayang Norhayati Abang Jawawi, and Radziah Mohammad, "Lab Book – Programming Technique II C++", Second Edition, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2009.
14. Norazah Yusof, Dayang Norhayati Abang Jawawi, Noraniah Mohd Yassin, Radziah Mohammad, Subariah Ibrahim and Hamimah Mohd Jamil, "Lab Book – Programming Technique II C++", First Edition, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2008.
15. Norazah Yusof, Dayang Norhayati Abang Jawawi, Noraniah Mohd Yassin, Radziah Mohammad, Paridah Samsuri and Rohayanti Hassan, "Lab Book – Programming Technique I C++", First Edition 2007, Second Edition 2008, Third Edition 2009, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, 2009.
16. Nor Bahiah Hj Ahmad, Dayang Norhayati Abang Jawawi, Rozlina Mohamad, Norazah Yusof, Zuraini Ali Shah, Azah Kamilah Hj Muda, Shahliza Abd Halim, Ismail Mat Amin and Zarita Mohd Kosnin, "Module – Struktur Data & Algoritma Menggunakan C++ – Praktikal", Fakulti Sains Komputer dan Sistem Maklumat, Universiti Teknologi Malaysia, 2004.
17. Nor Bahiah Hj Ahmad, Rozlina Mohamad, Norazah Yusof, Zuraini Ali Shah, Dayang Norhayati Abang Jawawi, Azah Kamilah Hj Muda, Shahliza Abd Halim, Ismail Mat Amin and Zarita Mohd Kosnin, "Module Struktur Data & Algoritma Menggunakan C++", Fakulti Sains Komputer dan Sistem Maklumat, Universiti Teknologi Malaysia, 2002.

Books / Proceeding Editor

1. Jawawi D.N.A., Bajwa I.S., Kazmi R., Communications in Computer and Information Science 1615, ISSN:1865-0929, 2020. (Editor)
2. Bajwa, I.S., Sibalija, T., Jawawi, D.N.A., Communications in Computer and Information Science 1198, ISSN:1865-0929, 2020. (Editor)
3. Bajwa, I.S., Sibalija, T., Jawawi, D.N.A., Intelligent Technologies and Applications, ISBN: 978-981-15-5232-8, 2019. (Editor)
4. Imran Ghani, Dayang Norhayati Abang Jawawi, Siva Dorairaj and Ahmed Sidky, Emerging Innovations in Agile Software Development, IGI Global, ISBN: 781466698581, 2016. (Editor)
5. Dayang Norhayati Abang Jawawi, Shahida Sulaiman, Kamal Zuhairi Zamli, Jamaiah H. Yahaya, Radziah Mohamad, Jurnal Teknologi, Vol 77, No 9, eISSN 2180-3722, 2015. (Chief Editor)
6. Dayang Norhayati Abang Jawawi, Shahida Sulaiman, Radziah Mohamad, and Nor Azizah Sa'adon, "Malaysian Software Engineering Conference (MySEC 2014)", 978-1-4799-5439-1, 2014. (Editor)
7. Dayang Norhayati Abang Jawawi and Mohd Nazir bin Ahmad Sharif "The Proceedings of The Software Engineering Postgraduates Workshop (SEPoW2011)", 978-967-0194-15-8, 2011. (Editor)
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20. Suzila Sabil, Dayang Norhayati Abang Jawawi, "Graphical Component Modeling Tool for Embedded Real Time Software", The 5th Postgraduate Annual Research Seminar (PARS 09), UTM, Johor, Malaysia, 15th – 19th June 2009, pp. 792-797.
21. Shahliza Abd, Dayang Norhayati Abang Jawawi, "Variability Integration at Requirement and Architecture Level in Software Product Line Engineering", The

- 5th Postgraduate Annual Research Seminar (PARS 09), UTM, Johor, Malaysia, 15th – 19th June 2009, pp. 852-857.
22. Mohd Zulkifli Mohd Zaki, Dayang Norhayati Abang Jawawi, "A Review on UML-RT and UML-SPT for Embedded Real Time Component-based Developmnet", The 5th Postgraduate Annual Research Seminar (PARS 09), UTM, Johor, Malaysia, 15th – 19th June 2009, pp. 735-740.
 23. Yavuz Selim Sengoz, Dayang Norhayati Abang Jawawi, "A Comparision UML Tool for Real-Time Software Modeling", The 5th Postgraduate Annual Research Seminar (PARS 09), UTM, Johor, Malaysia, 15th – 19th June 2009, pp. 708-713.
 24. Mohd Adham Isa, Dayang Norhayati Abang Jawawi, "Enhancement of Rapid Object Process for Embedded System (ROPES) Metamodel to Support Pattern-Oriented Development", The 5th Postgraduate Annual Research Seminar (PARS 09), UTM, Johor, Malaysia, 15th – 19th June 2009, pp. 779-786.
 25. Siti Nurmaini, Dayang Norhayati Abang Jawawi, "Weightless Neural Network for Environmental Recognition", The 5th Postgraduate Annual Research Seminar (PARS 09), UTM, Johor, Malaysia, 15th – 19th June 2009, pp. 116-121.
 26. Suzila Sabil and Dayang Norhayati Abg Jawawi, "Application of MARMOT Method for Autonomous Mobile Robot", *Malaysian Software Engineering Conference (MySEC2008)*, December 2008, Kuala Terengganu.
 27. Mohd Zulkifli Mohd Zaki and Dayang Norhayati Abg Jawawi, "A Component-Based Development Approach for Embedded Real-Time Software with UML-RT", *Malaysian Software Engineering Conference (MySEC2008)*, December 2008, Kuala Terengganu.
 28. Shahliza Abd Halim, Dayang Norhayati Abg Jawawi and Safaai Deris, "Evaluation of Systematic Variablity Management for Requirement to Architecture Concern in Software Product Line", *FSKSM Postgraduate Annual Research Seminar 2008 (PARS's 08)*, July 2008, Skudai.
 29. Suzila Sabil and Dayang Norhayati Abg Jawawi, "A Review on Current Component Technologies for Embedded Real-Time System", *FSKSM Postgraduate Annual Research Seminar 2008 (PARS's 08)*, July 2008, Skudai.
 30. Shahliza Abd Halim, Dayang Norhayati Abg Jawawi and Safaai Deris, "Generator Technologies Using Fundamental Methods in Software Product Line", *Malaysian Software Engineering Conference (MySEC2007)*, December 2007, Kuala Lumpur, pp. 111-115.
 31. Shahliza Abd Halim, Dayang Norhayati Abg Jawawi and Safaai Deris, "Underlying Software Product Line Methods and Generator Implementation", *FSKSM Postgraduate Annual Research Seminar 2007 (PARS's 07)*, July 2007, Skudai.
 32. Maheyazah Md. Sirat @ Md. Siraj, Siti Zaiton Mohd Hashim and Dayang Norhayati Abang Jawawi, "Self Healing Systems – A Fundamental Review", *FSKSM Postgraduate Annual Research Seminar 2007 (PARS's 07)*, July 2007, Skudai.
 33. Dayang Norhayati Abang Jawawi, Safaai Deris, Rosbi Mamat, (2006). "A Component-Oriented Programming Framework for Developing Embedded

- Mobile Robot Software using PECOS Model", *Second Malaysian Software Engineering Conference (MySEC'06)*, Kuala Lumpur, December 2006, pp. 255-261.
34. Shahliza Abd Halim, Dayang Norhayati Abang Jawawi, and Safaai Deris, (2006). "Synergy between Generative Reuse and Software Product Line", *Second Malaysian Software Engineering Conference (MySEC'06)*, Kuala Lumpur, December 2006, pp. 273-277.
 35. Dayang Norhayati Abang Jawawi, Safaai Deris and Rosbi Mamat, (2006). "A Temporal Modeling Approach for Schedulability Analysis in Component-Based Development", *Third National Real-Time Technology and Applications Symposium 2006 (RENTAS'06)*, December 2006, Kuala Lumpur.
 36. Dayang Norhayati Abang Jawawi and Safaai Deris. (2006). "An Approach for Predictable Real-Time Software in Component-Based Software Development of Autonomous Mobile Robot Systems", *FSKSM Postgraduate Annual Research Seminar 2006 (PARS's 06)*, May 2006, Skudai, pp. 405-411.
 37. Dayang Norhayati Abang Jawawi, Radziah Mohamad, Safaai Deris, Rosbi Mamat, (2005). "Transforming Pattern-Oriented Models into Component-Based Models for Embedded Real-Time Software Development", *First Malaysian Software Engineering Conference (MySEC'05)*, Penang, December 2005, pp. 18-23.
 38. Dayang Norhayati Abang Jawawi, and Safaai Deris, (2005). "Experience in Adopting an Embedded Real-Time Component Model in Autonomous Mobile Robot Software Design", *FSKSM Postgraduate Annual Research Seminar 2005 (PARS's 05)*, May 2005, Skudai, pp. 109-113.
 39. Dayang Norhayati Abang Jawawi, Rosbi Mamat and Safaai Deris, "Component-Based Software Engineering for Autonomous Mobile Robot Systems", *National Computer Science Postgraduate Colloquium 2005(NaCSOC'05)*, June 2005, Pulau Pinang.
 40. Dayang N.A. Jawawi, Safaai Deris, Rosbi Mamat, "An Evaluation of Embedded Real-time Component Models for Autonomous Mobile Robot Software Development", *National Real-Time Technology and Applications Symposium (RENTAS 2004)*, University Putra Malaysia, Serdang, 24-25 Nov 2004, pp. 63-71.
 41. Dayang N.A. Jawawi, Safaai Deris, Rosbi Mamat, "Deployment of Software Analysis Patterns for Component-Based Development of Embedded Real-time Mobile Robot Software", *National Real-Time Technology and Applications Symposium (RENTAS 2004)*, University Putra Malaysia, Serdang, 24-25 Nov 2004, pp. 72-79.
 42. Dayang Norhayati Abg. Jawawi, Ahmad Zariman Abd. Majid, Ahmad Ruzaimie Abd. Rashid, Safaai Deris, Rosbi Mamat, Radziah Mohamad, "Evaluation of Hybrid Software Engineering Methodology for Development of Embedded Firmware for Intelligent Autonomous Mobile Robot", *Malaysian Science and Technology Congress MSTC*, Cititel MidValley, Kuala Lumpur, 23-25 September 2003.
 43. Radziah Mohamad, Dayang Norhayati Abang Jawawi, Safaai Deris, Rosbi Mamat, "The Use of Formal Methods in Real-Time Systems", *Malaysian Science and Technology Congress MSTC*, Cititel MidValley, Kuala Lumpur, 23-25 September 2003.

44. Dayang Norhayati Abang Jawawi, Radziah Mohamad, Safaai Deris, Rosbi Mamat, "A Hybrid Software Engineering Methodology for Small-Scale Embedded Firmware Development", *Advanced Technology Congress 2003, Conference on Intelligent Systems and Robotics*, Putrajaya Marriott Hotel, IOI Resort, KL, 20-21 May 2003.
45. Radziah Mohamad, Dayang Norhayati Abang Jawawi, Safaai Deris, Rosbi Mamat, "A Review of Formal Method Techniques for Specifying a Wall-Climbing Robot Control Firmware Requirement", *Advanced Technology Congress 2003, Conference on Intelligent Systems and Robotics*, Putrajaya Marriott Hotel, IOI Resort, KL, 20-21 May 2003.
46. Dyg. Norhayati Abg. Jawawi, Safaai Deris, Rosbi Mamat, "Evaluation of Real-time Operating System for Small-scale Embedded Systems", *Proc. of Malaysian Science and Technology Congress'98*, Pulau Pinang, 10-11 November 1998.

8. SUPERVISION

8.1. Supervision of Post-graduate Project by Research

PhD by Reaserch Candidate: Completed

1. Nurul Naziha Jamal, "Learning Analytics Framework for Discovering the Competencies of Students in Online Learning Environments", March 2022-Aug 2025. (Main-Supervisor).
2. Nadirah Mohamad, "Effort Persistence and Intensity Features Model Based on Temporal Behaviour for Predicting online Student Performance", March 2021-April 2025 (Main-Supervisor).
3. Ako Abubakr Jaafar, " An Improved Localized Software Effort Estimation Based on Missing Data Imputation and Feature Optimization ", 2017 – June 2024 (Main Supervisor).
4. Ayman Jalal Hasan Al Mutlaq, "Feature Weight Optimization for Localized Software Effort estimation", Aug 2018-June 2024. (Main Supervisor).
5. Falak Sher, "Multi-Aspect Requirements Prioritization Technique for Value-Based Software Development", 2012 - 2023 (Main Supervisor)
6. Eglal Mohammed Khalifa Osman, "Regression Testing Framework for Generating And Prioritizing Test Cases Using Artificial Intelligence Techniques", 2011 – 2022. (Main-supervisor)
7. Muhammad Khatibsyarbini Abd Rahim, "Toward Effective Clustering Test Case Prioritization for Regression Testing" Feb 2019-2022. (Co-Supervisor).
8. Rabatul Aduni Binti Sulaiman, "Cost-Effective Model-Based Test Case Generation and Prioritization for Software Product Line", 2016 – 2020 (Main-Supervisor).
9. Muhammad Dhiauddin Mohamed Suffian, "A Prediction Model for System Testing Defects Using Prior Phases Metrics", 2017 – 2020. (Main-Supervisor).

10. Habibah Binti Ismail, "Hybrid Approach based on Partitioned and Global Scheduling for Weakly Hard Real-Time Tasks", 2013 – 2019. (Main-Supervisor).
11. Karzan Wakil, " Adaptive Model For Web Engineering Methods to Develop Multi Web Applications in Agile Environment ", (Main Supervisor). 2014-2019.
12. Muhammad Arif Shah, "Missing Data Imputation, Optimization and Localized Software Development Effort Estimation", 2016–2019 (Main-Supervisor).
13. Muhammad Younas "Methodology for Eliciting Non-Functional Requirements In Agile Development Using Cloud Computing", 2016-2019 (main-Supervisor)
14. Mojtaba Raeisinejaddobuneh, "Hybrid and Dynamic Static Criteria Models for Test Case Prioritization of Web Application Regression Testing", 2011 - 2018 (main Supervisor).
15. Syed Rafaqat Hussain Shah Kazmi, "Effective Regression Test Case Selection Technique using Weighted Average Scoring" , 2015-2018 (main-Supervisor).
16. Abu Bakar Elsafi Ali Ahmad, "Model-Based Integration Testing Technique using Formal Finite State Behavioral Models for Component-Based Software", 2011 - 2017. (main Supervisor)
17. Adila Firdaus Binti Arbain, "Non Functional Requirement Traceability in Agile", 2013 – 2017. (Co-Supervisor).
18. Awad Ali Abdelrhim Omar, "Architecture-Based Reliability Analysis Approach for Components-Based Software", 2012 - 2016 (main Supervisor)
19. Abdelzahir Abdelmabaud Rahama Alnaour, "Architecture and Model to Improve Application Scalability and Performance of Federated Cloud", 2016 (main Supervisor)
20. Shahliza Abd Halim, "Generative Reuse in Software Product-Line", 2006 - 2016. (co-supervisor)
21. Muhammad Imran Babar, "Value-Based Framework for Stakeholders Quantification", 2012-2015 (Co-Supervisor)
22. Abid Mehmood, "Aspect-Oriented Model-Driven Code Generation Approach for Integration of Aspect Orientation and Model-Driven Engineering", 2011 - 2014. (main-supervisor)
23. Mohd Adham Isa, "Model-Driven Performance Engineering for Wireless Sensor Networks (WSNs)", 2010 - 2013. (main-supervisor).
24. Vahid Khatibibardsiri, "Presenting A New Approach for Accurate Software Cost Estimation", 2010 - 2013. (main-supervisor).
25. Alawi Abdullah Ahmed Al_Sagaf, "Performance measurement in service level agreement for service-oriented architecture systems using model testing", 2008 - 2013. (main-supervisor).
26. Muhammad Waqar Aziz, "Service Oriented Analysis and Design Methodology for Distributed Embedded Real-Time System", 2009 - 2013. (co-supervisor)
27. Siti Normaini, "An Embedded Interval Type2 Fuzzy-Neural Controller Based on Weightless Neural-Network for Mobile Robot", PHD student, 2008 - Aug 2011. (co-supervisor)

On-Going

1. Azlina Binti Narawi, "A Hybrid Approach for Rainfall Forecasting", Oct 2019-now. (Main Supervisor).
2. Huda Ghalib Ali Iskandar, "Amyotrophic Lateral Sclerosis Progression Prediction Model Based on Deep learning", Nov 2020-Now (Main-Supervisor).
3. Devi Yurisca Bernanda, "6. Enhancement of OGORE Through a Data Driven Approach For Elevating Software Requirement Engineering Quality", Nov 2021-Now (Main-Supervisor).
4. Laminu Aminu Song, "Binary Classification of Individual Student's Grades using Ensemble Filter-Based Feature Selection for Student Performance Prediction", Nov 2021-Now (Main-Supervisor).
5. Ma Wei, "Prediction Model of Learning Behaviour Effect Based on Flipped Classroom", Nov 2021-Now (Main-Supervisor).
6. Syed Muhammad Junaid Hassan, "Enhancing History-Based Test Case Prioritization Using Defect Prediction to Solve Equal Priority Problem in Regression Testing", March 2022-Now (Main-Supervisor).
7. Mohamed Mokhtar Ouardi. "Few Shot Learning Semi-Supervised Mixed Learning Classifier Approach in Advanced Optical Inspection", Nov 2022-Now. (Main-Supervisor).
8. Nurul Huda Binti Nor Din. "Ontology-Based Adaptive Learning Framework for Students' Digital Competencies Discovery", Nov 2024-Now. (Main-Supervisor).

Master by Research (MPhil) Candidate:

Completed

1. Suzila Binti Sabil, "Component-Oriented Development Method for Embedded Real Time Software", MSc student, Dec. 2007 - Nov. 2010. (main-supervisor)
2. Mohd Zulkifli Bin Mohd Zaki, "A Combination of UML for Marte and Component-Based Development Methodology for Modeling Embedded Real-Time System", Dec 2008 – Sept 2012. (main-supervisor).
3. Yavuz Selim, "Real-Time UML Model and RMA Integrated Approach for Schedulability Analysis of Real-Time Systems", July 2008 – Jan 2011. (main-supervisor)
4. Habibah Binti Ismail, "A Scheduling Analysis Framework for Predicting the Weakly Hard Real-Time Tasks Performance", Dis. 2009 - 2013. (main-supervisor)
5. Rooster Anak Tumeng, "Test Case Prioritization Upon Varying Requirements for Critical Software", Sept 2014 – Jan 2016. (Main-Supervisor).
6. Muhammad bin Sahak, "Efficient Test Case Prioritization Technique for Product in Software Product Lines", 2015-2018. (Main-Supervisor).
7. Faten Alia Zainal Abidin, "Agile Transition Model Based on Human Factors", 2016-2018. (Main-Supervisor)
8. Nur Syafiqah Zahirah Bt Abdul Rahman, "Model Based Test Case Generation and Prioritization", Sept 2014 – 2018. (Main-Supervisor)

9. Muhammad Khatibsyarbini Abd Rahim, "A Study of Test Case Prioritization Technique Based on String Distance Metrics" Sept 2016-2018. (Co-Supervisor).
10. Safwan Bin Abd Razak, "Prioritization Approach In Handling Large Software Product Line", 2015-2020. (Co-Supervisor)
11. Muhammad Irsyad Kamil, "A Hybrid Technique in Regression Testing", Sep 2019-Jan 2022. (Main-Supervisor)
12. Nurul Nazihah Jamal, "Adaptive Learning Model for Learning Computational Thinking Through Educational Robotics", Sep 2019-Nov 2021. (Main-Supervisor)
13. Ain Balqis MD Mor Basmmi, "Core Asset Services Development Approach Through Service Oriented Product Line for Healthcare Domain", Sep 2019-April 2022. (Co-Supervisor)
14. Muhammad Syafiq bin Abdul Manan, "Enhance History-Based Test Case Prioritization using 2-Way Test Generation in Regression Testing", Oct 2020 – 2023. (Main-Supervisor)

On-Going

1. LEE Jin Yun, "Time Series Forecasting Learning Outcome Model for Students' Competencies Prediction", Nov 2024-Now. (Main-Supervisor).

Supervision of Postgraduate Dissertation by Mixed Mode

1. Khoo Yong Jun, "Generating API Test Scripts From Open API Specification Using Multi-Agent Generative AI", Sesi 1-2023/2024 & Sesi 2-2023/2025.
2. Divyasini A/P A. Konasegar, "Explore The Factors Impacting Students' Digital Competency within Online Learning Environment", Sesi 1-2023/2024 & Sesi 2-2023/2024.
3. Mahdi Uz Zaman, "Software Engineering Process Enhancement for Agile Software Product Line Engineering", Sesi 1-2020/2021 & Sesi 1-2021/2022.
4. Mayyadah Abdul Wahhab Abdul Jabbar Altaie, "Adaptive Gamification Framework to Promote Computational Thinking", Sesi 1-2020/2021 & Sesi 2-2020/2021.
5. Hamsa Naji Nsaif Al-Sammarraie, "Black Hole Algorithm For T-Way Test Suite Generation", Sesi 2-2018/2019 & Sesi 1-2019/2020
6. Hussam Mohamed Bashir Mohamed Ali, Model-Based Semi-Automated Test Case Generation Approach Using UML Diagrams, Sesi 2-2017/2018, Sesi 1-2018/2019 & Sesi 2-2019/2019
7. Iman Tarig Nasr Abdelrahman, "Factors Influencing e-Learning Environment for Improving Software Engineering Education in Sudan", Sesi 2-2017/2018 & Sesi 1-2018/2019.
8. Ushananthny Suvelayutnam, "Reusable Patent Navigation Software Architecture using Software Product Line Approach", Sesi 2-2017/2018.
9. Harvinder Kaur A/P Rajinder Singh, "Improvement on Label Production Software Quality with Test Class Standardization using XP Technique", Sesi 2-2017/2018.

10. Chester Laurence Barcelon Tan, "Software-in-the-Loop Testing for Product Testing Software in Label Test Process", Sesi 2-2017/2018.
11. Yap Lik Ping, "The Improvement of Manufacturing Transition Process for Production", Sesi 2-2017/2018.
12. Siti Noraini binti Mohamad Ekssan, "Educational Robotics Future Model with Pegagogical Element in Software Product Line", Sesi 1-2016/2017.
13. Farrahin binti Maidin, "Enhancement of BAT Tesing Technique for Software Product Line", Sesi 1-2016/2017
14. Norhidawani Mohamed, "Smart Learning Framework to Support Soft Skills", Sesi 2-2015/2016
15. Nur Athirah Binti Omar, "Component Based Software Realibility Analysis Approach for Embedded Precision Farming Systems", Sesi 1-2015/2016.
16. Nur Fatimah As-Sahra, "Prioritization of Generated Test Cases Using Sequence Diagram and Labeled Transition Systems for Regression Testing", Sesi 1-2014/2015.
17. Hosein Abedinpourshotorban, "Branch Coverage Test Case Generation by The Means of Genetic Algorithm", Sesi 1-2014/2015.
18. Ahmed Sheikh Abdullahi Madey, "An Enhancement of Slicing Test Algorithm for Integration Testing of Embedded system, Sesi 2-2012/13.
19. Ashvini Devi A/P Krishnan, "Systematic Secure Design Guideline to Improve Integrity and Availability of System Security", Sesi 1-2012/13.
20. Nansukusa Yudaya, "An Enhanced Test Case Generation Technique Using Activity Diagram for System Testing", Sesi 1-2011/12, Sesi 1-2012/13.
21. Ako Abubakr Jaafar, "Improving Service Reusability Using Enterprise Service Bus and Business Process Execution Language", Sesi 1-2011/12, Sesi 1-2012/13.
22. Amir Hossein Safi, "Redundant-Free Web Service Composition with User Requirements Consideration", Sesi 1-2011/12, Sesi 1-2012/13.
23. Karzan Wakil Said, "Enhancement for UML-Based Web Engineering for The Development of Homepages", Sesi 1-2011/12, Sesi 1-2012/13.
24. Norazian bt Mohd Hamdan, "System and Software Architecture of Precision Farming based on Wireless Sensor Network", Sesi 1-2010/11, Sesi 2-2011/12.

1.1. Supervision of Postgraduate Project by Course

1. Mohamad Fitri bin Marzilam, "Sustainable E-Learning Adoption Model for Royal Malaysian Navy", Sesi 2-2021/22, Sesi 3-2021/22.
2. Ahmad Izwan bin Che Ahmad, "Enhancement of Pilot Repetitive Generation Module for Air Traffic Control Training Using Transformers Architecture", Sesi 2-2021/22, Sesi 3-2021/22.
3. Fazliezawati Binti Abdullah, "Internet of Things Adoption Model for Malaysian Armed Forces", Sesi 2-2021/22, Sesi 3-2021/22.
4. Muhammad Shafie Bin Hasulbullah, "Royal Malaysian Air Force Frequency Assignment Model using Computational Intelligence", Sesi 2-2021/22, Sesi 3-2021/22.

5. Nurirdayu Binti Azmi, "Sistem Tempahan Jahitan Dan Jualan Baju Fesyen Muslimah Atas Talian (A.I Stylista)", Sesi 1-2012/13, Sesi 2-2012/13, Sesi 1-2013/2014.
6. Nik Zahirah Binti Ismail, "Sistem Percetakan Virtual (Fast Print)", Sesi 1-2012/13, Sesi 2-2012/13.
7. Nurulhana binti Sulaiman, "Sistem Pengawalan Berkomputer Di Ladang Cendawan", Sesi 1-2010/11 – Sesi 1-2012/13.
8. Mahmood Aghajani Siroos Talab, "Code Generation for Embedded Real-Time System", Sesi 1-2009/10, Sesi 2-2009/10, Sesi 1-2010/11.
9. Mohd Rizali bin Md Masri, "Integrated Monitoring and Management Systems (IMMS)", Sesi 2-2009/10, Sesi 2-2010/11.
10. Mohd Adham Isa, "Enhancement of Rapid Object Process for Embedded System (ROPES) to Support Pattern Oriented Development", Sesi 2-2008/9, Sesi 1-2009/10. (Main supervisor)
11. Simba anak Bau, "Software Process for Integrated Pattern-Oriented Analysis & Design (POAD) and Component-Oriented Programming (COP) for Embedded Real-Time Systems", Sesi 2-2007/08, Sesi 1-2008/09.

9. PROFESSIONAL MEMBERSHIP

1. Malaysia Board of Technologies, 2018 - now.
2. Association for Computing Machinery 2021 - now
3. Malaysian Software Engineering Interest Group (MYSEIG), 2006 - now.
4. IEEE Member 2008 - now
5. International Association of Engineers (IAENG) member 2011 - now (the IAENG Society of Computer Science, the IAENG Society of Scientific Computing, the IAENG Society of Software Engineering)
6. Malaysian Software Testing Hub, 2012 – now
7. Malaysian Invention and Design Society (MINDS), 2013 – now

10. AWARDS

1. Gold Award - Programming Resilience Skills through Competition-Based Learning using Mobile Robots in Real-Time Software Engineering Course, New Academia Learning Innovation (NALI 2023): Exhibition & Competition. Universiti Teknologi Malaysia, 6-8 November 2023.
2. Gold Award - Collaborative Learning Approach for Teaching Computational Thinking using Mobile Robot during Pandemic, New Academia Learning Innovation (NALI 2021): Exhibition & Competition. Universiti Teknologi Malaysia, 6-8 December 2021.
3. Gold Award - Adaptive Learning Management System for Nurturing Computational Thinking Concepts through Educational Robotic, New Academia Learning Innovation (NALI 2021): Exhibition & Competition. Universiti Teknologi Malaysia, 6-8 December 2021.

4. Gold Award - Industry-Infused Curriculum in Computing Education for Future Ready Graduates, New Academia Learning Innovation (NALI 2018): Exhibition & Competition. Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia, 18 September 2019.
5. Anugerah Kecemerlangan Perkhidmatan for 2018, Majlis Anugerah Gemilang Fakulti Kejuruteraan, 28 Nov 2019.
6. Anugerah Buku Karya Asli, Kategori Sains dan Teknologi untuk tahun 2018, Majlis Anugerah Kecemerlangan & Penghargaan UTM 2019.
7. Anugerah Penulis Dalam Jurnal Berindeks 2018, Category Faculty of Engineering, School of Computing, UTM. 17 July 2019.
8. ~~Excellent Award - The Most Active Teachers using The Blended Learning - Course SCSJ4423 Session 2018/2019, Universiti Teknologi Malaysia. 2019.~~
9. Finalis kategori pengalaman pembelajaran imersif (bersemuka), Anugerah Khas YB Menteri Pendidikan Malaysia Rekabentuk Kurikulum dan Penyampaian Inovatif tahun 2019 (AKRI2019), 11-12 September 2019.
10. Best Paper Reseach Award – Sustainable & Integrated Engineering International Conference 2019, 8-9 December 2019.
11. Excellent Award - The Most Active Teachers using The Blended Learning – Course MCSS1023-01 and SCSJ4423 Session 2017/2018, Universiti Teknologi Malaysia. 29 June 2018.
12. Bronze Award, New Academia Learning Innivation (NALI 2018) Exhibition & Competition, 25-26 September 2018, UTM, Asia Technological University Network (ATU-Net).
13. Anugerah Buku Negara 2107, Kategori Pengajian Tinggi, Buku Sains dan Teknologi Terbaik.
14. Silver Medal, at iPhex Innovative Practices in Higher Education Expo 2017 (I-PHEX 2017), 16 November 2017.
15. Best Paper Reseach Award Postgraduate Research Workshop@SOFTEC Asia 2017, September 2017.
16. Silver Medal, at iPhex Innovative Practices in Higher Education Expo 2016 (I-PHEX 2016), 11 August 2016.
17. Universiti Teknologi Malaysia Excellent Service 2016
18. Gold Award, Invention, Innovation & Design on E-Learning (IIDEL), at National University Carnival on e-Learning (NUCEL 2015).
19. ~~The Most Active Teachers using The Blended Learning - Course SCSJ1023-02 Session 2014/2015, Universiti Teknologi Malaysia.~~
20. ~~Excellent Award - The Most Active Teachers using The Blended Learning - Course SCSJ4423-01 Session 2014/2015, Universiti Teknologi Malaysia.~~
21. ~~The Most Active Teachers using The Blended Learning - Course MCSS1023-01 Session 2014/2015, Universiti Teknologi Malaysia.~~
22. Best Paper Reseach Award Postgraduate Research Workshop@SOFTEC Asia 2015, 7th September 2015.
23. Excellent Service Award 2014, Faculty of Computing, UTM.
24. Community Service Award 2014, Faculty of Computing, UTM.

25. Publication (Other Publications) Award 2014, Faculty of Computing, UTM.
26. Faculty of Computing, UTM Excellent Service 2013.
27. Best Paper Award The 7th Malaysian Software Engineering Conference (MySEC2013), 20-21 November 2013.
28. Silver Medal, at PECIPTA International Conference and Exposition on Invention of Institutions of Higher Learning, (PECIPTA2013), 7-9 November 2013.
29. Universiti Teknologi Malaysia Excellent Service 2011
30. Gold Award, at the Art and Technology Exhibition 2012 (INATEX2012), 3rd - 5th October 2012.
31. Pengiktirafan dalam Penyelidikan dan Pembangunan (R&D) di peringkat Kebangsaan dan Antarabangsa.
32. Best paper the 3rd Software Engineering Postgraduate Workshop 2010 (SEPoW2010).
33. Gold Medal, the Malaysian Technology Expo 2010 (MTE2010), 4-6 February 2010.
34. Gold Award, at the 11th Art and Technology Exhibition 2009 (INATEX2009), 21st -23rd October 2009.
35. Best Poster Award in 2008 Regional Student Conference on Research Development (SCoReD2008), IEEE Malaysia.
36. Universiti Teknologi Malaysia Excellent Service 2007.
37. Best Robotics Paper Award in International Conference on Control, Instrumentation and Mechatronics Engineering 2007 (CIM'07).
38. Merit Award (Doctor of Philosophy) on excellent academic program 2007.
39. Best Presenter Award in FSKSM Postgraduate Annual Research Seminar 2006 (PARS's 06).
40. Best Poster Award in FSKSM Postgraduate Annual Research Seminar 2006 (PARS's 06).
41. Best Paper Award in FSKSM Postgraduate Annual Research Seminar 2005 (PARS's 05).
42. Best Paper Award in First Malaysian Software Engineering Conference (MySEC'05).
43. Universiti Teknologi Malaysia Excellent Service 2002.
44. Excellent Service 2000, Faculty of Computer Science and Information Systems, Universiti Teknologi Malaysia.

11. OTHER ACTIVITIES

11.1. Academic Program External Examiner/Advisor

1. External Examiner, Faculty of Computing, Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA), 2024-2026.
2. Academic Advisor, Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia (UKM), 2021-2023.
3. Program Study Committee, Faculty of Information and Communication Technology (FTMK), Universiti Teknikal Malaysia Melaka (UTeM), 2021-2023.
4. Department of IT, Faculty of Management & Business Technology, Kuala Lumpur Metropolitan University Collage, 2016- 2018.

5. External Advisor, Faculty of Industrial and Technology Management, Kolej Yayasan Pahang, 2018, 2023.
6. External Examiner, Faculty of Computer Science and Information Technology, Universiti Malaysia Sarawak (UNIMAS), 2017-2018, 2019 - 2020.

11.2. Thesis External Examiner

1. "Improving Cross-Project for Software Defect Prediction" Doctor of Philosophy (Software Engineering), Faculty of Computer Science and Information Technology, Universiti Putra Malaysia, 2024.
2. "Designing Cocomo II-NN-GSD by Integrating Cocomo II With Artificial Neural Network to Improve Cost Estimation Accuracy", Doctor of Philosophy in Information Technology, Faculty of Computer Sciences and Information Technology, Universiti Tun Hussein Onn Malaysia, 2024.
3. "Intelligent Guided Algorithm Using Q-Learning Algorithm for Selecting Potential Actions in Automated GUI Testing", Master of Science, Faculty of Computer Science and Information Technology, Universiti Putra Malaysia, 2023.
4. "Model-Driven Code Generator for Framework-Based Web Development", Master of Software Engineering, Faculty of Computer Science and Information Technology, Universiti Malaya, 2023.
5. "A Study of Clustering Based Semantic Web Service Discovery for Business Service", Doctor of Philosophy in Engineering, S Birla Institute of Technology, Jharkhand, India, 2023.
6. "A Novel Method for Software Restructuring Using Clustering with Multiple Refactoring Methods", PhD thesis, School of Computer Engineering and Technology, Faculty of Engineering and Technology, Dr. Vishwanath Karad MIT World Peace University, Pune, India, 2023.
7. "Kerangka Pengajaran Dan Pembelajaran Pengaturcaraan melalui Pendekatan Flip", Doktor Falsafah, Fakulti Teknologi Dan Sains Maklumat, Universiti Kebangsaan Malaysia, 2023.
8. "Construction Of Prioritized T-Way Test Suite Using Bi-Objective Dragonfly Algorithm", Master of Science, Faculty of Computing, Universiti Malaysia Pahang, 2023.
9. "A Study of Clustering Based Semantic Web Service Discovery for Business Service", Doctor of Philosophy in Engineering thesis Birla Institute of Technology, 2022.
10. "Domain Specific Modelling Language to Support the Cloud Migration of Platform Independent Model of An Open-Source Simulation Software", PhD thesis, Computer & Information Sciences Department, Universiti Teknologi PETRONAS, 2021.
11. "An Adaptive User Interface Model for Enhancing Usability and Performance Efficiency of Diabetes Mobile Application", Master Dissertation, Universiti Malaya, 2021.
12. "Measuring Aircraft Altimetry System Error Using Automatic Dependent Surveillance-Broadcast Data", Master Dissertation, Universiti Malaya, 2021.

13. "Intelligent Environment Monitoring Model for Crop Pest Prediction", PhD thesis, The Islamia University of Bahawalpur, Pakistan, 2019.
14. "Transformation of Relational Database into Oracle NoSQL Key-Value Store", PhD thesis, The Islamia University of Bahawalpur, Pakistan, 2019.
15. "Intelligent Recommender and Decision Support System for Effective Management of Software Projects", PhD thesis, National College of Business Administration & Economics, Pakistan, 2019.
16. "Pedagogical Agent-Based Cognitive Architecture for Intelligent Virtual Laboratory Learning Environment", PhD thesis, National College of Business Administration & Economics, Pakistan, 2019.
17. "Domain Specific Modeling Language for Strategy Educational Games and Transfer Learning Theory (SEGL)", Master thesis, Computer and Information Sciences Department, Universiti Malaysia Petronas, 2018.
18. "An Experimental Study of Neighborhood Based Meta-Heuristic Algorithms for Test Case Generation Satisfying the Modified Condition/Decision Coverage Criterion", Master thesis, Faculty of Computer Systems & Software Engineering, Universiti Malaysia Pahang, 2017.
19. "A Demand on the Fly Multi Level Graph Based Dynamic Location Based Service Selection for QoS Development in Cloud Environment using A3 Measures", PhD thesis, Faculty of Information and Communication Engineering, Anna University, India, 2017.
20. "Improving the Accuracy of COCOMO II using an Artificial Neural Network with Hyperbolic Tangent Activation Function", Master thesis, Faculty of Computer Science & Information Technology, Universiti Tun Hussein Onn Malaysia, 2017.
21. "Task-based Program Comprehension Framework for Novices", PhD thesis, Fakulti Sains Komputer dan Matematik, Universiti Teknologi MARA, 2016.
22. "Software Process Meta-Modelling: An Approach for Defining and Representing the Software Engineering Process", PhD thesis, Fakulti Teknologi dan Sains Maklumat, Universiti Kebangsaan Malaysia, 2015.
23. "Design an Implementation of Block Store to Support Block Based Software Development Methodology", PhD thesis, Fakulti Teknologi dan Sains Maklumat, Universiti Kebangsaan Malaysia, 2014.
24. "A Model for Managing and Tracking Modification Requests in Web Application", Master thesis, Universiti Sains Malaysia, 2013.
25. "A Component-Oriented Approach for Developing a Mobile Financial Application System", Master thesis, Universiti Malaya, 2008.

11.3. Keynote Address/Invited Speaker

- 1 Invited Speaker, "AI in Education: Empowering Learning or Encourageing Dependence?", Qaiwan International University, Sulamanyah, 21 May 2025.
- 2 Keynote Speaker, "Teaching Computational Thinking And Programming Through Robotics-Driven Learning", 2025 2nd International Conference on Informatics

- Education and Computer Technology Applications (IECA 2025), 18 January 2025, Kuala Lumpur, 20-23 February 2025.
- 3 Invited Speaker, "Women in Software Engineering Education: Competency and Diversity", 14th International Conference on Software and Computer Applications (ICSCA 2025), Kuala Lumpur, 18 January 2025.
 - 4 Invited Speaker, "Artificial Intelligent in Education", Workshop (Loka Karya), Fakultas Ilmu Komputer, Universitas Sriwijaya, 23 September 2024.
 - 5 Invited Speaker, "Artificial Intelligent in Education", Open Distance Learning Training, Fakulti Sains Komputer dan Matematik, Universiti Malaysia Terengganu, 20-21 March 2024.
 - 6 Invited Speaker, "Cultivating Resilience with Computational Thinking in Education and Entrepreneurship for Society 5.0", International Conference Lembah Dempo University (ICLDU2023), Universitas Lembah Dempo, Indonesia, 14 December 2023.
 - 7 Keynote Speaker, "Computational Thinking: Academic and Career Resilience", New Academia Learning Innovation (NALI2023), UTM, 6-8 November 2023.
 - 8 Invited Speaker, "Sustainability in Software Engineering Education: Case of a Real-Time Software Engineering Course", 12th International Conference on Software and Computer Applications (ICSCA 2023), Kuantan, 23-25 February 2023.
 - 9 Keynote Speaker, "Nurturing Computational Thinking Skills through Educational Robots", Sustainable and Integrated Engineering International Conference (SIE 2022), Langkawi, 12-13 December 2022.
 - 10 Invited Speaker, "Nurturing Computational Thinking Skills: An Adaptive Approach", The Second Asia Workshop on Software Engineering, Online, September 16-18, 2022.
 - 11 Invited speaker, "Collaborative Learning in Digital Environment Experiences", organized by Centre for Applied Learning And Multimedia (CALM), UNIMAS, 13 April 2022.
 - 12 Invited speaker, "Nurturing Computational Thinking Skills: An Adaptive Approach", The 5th International Conference on Algorithms, Computing and Systems (ICACS 2021), Xi'an, China, September 24-26, 2021.
 - 13 Keynote Speaker, International Virtual Conference Of Emerging Trends In Computing and Software Engineering 2021, May 21 to 22, 2021, ILMA University, Pakistan.
 - 14 Invited speaker, "Collaborative Learning in Physical and Digital Environment: Experiences", organized by Centre for Applied Learning And Multimedia (CALM), UNIMAS, 31 March 2021.
 - 15 Keynote Speaker, "Computational Thinking through Educational Robotics", The 12th International Conference on Internet (ICONI 2020), 13-16 December 2020, Jeju Island, Korea, organized by Korean Society For Internet Information.
 - 16 Invited speaker, "Software Engineering Education for a Changing World", International webinar of Engineering Software for the Modern Challenges (ESMoC) 2020, organized by The Islamia University of Bahawalpur, Pakistan, 05 Sept. 2020.
 - 17 Invited speaker, "Lessons Learned: Online Teaching & Learning", organized by Centre for Applied Learning And Multimedia (CALM), UNIMAS, 18 June 2020.
 - 18 Keynote Speaker, "Educational Robotics in Computing Education", The Joint Conference on Green Engineering Technology & Applied Computing 2020,

- International Conference on Applied Computing (ICAC2020), 4-5 February 2020, Bangkok, Thailand, organized by UniMap and UTM.
- 19 Invited speaker, "Alternative Assessment", organized by Centre for Applied Learning And Multimedia (CALM), UNIMAS, 24 April 2019.
 - 20 Invited speaker, "Non written assessment", organized by Faculty of Computer Science and Information Technology, UNIMAS, 13 August 2018.
 - 21 Invited speaker, "Nurturing Computational Thinking through Educational Robotics", International Conference on Science, Technology, Engineering and Mathematics Education (ICSTEM), 2 - 3 October 2018, organized by organized by Universiti Teknologi Malaysia (UTM) and the Ministry of Education Malaysia.
 - 22 Invited speaker, PRIDE the Premier IHL Sharing Session (University-Digital Industry) 5 April 2018, organized by Malaysia Digital Economy Corporation (MDEC).
 - 23 Invited speaker, "Adaptation of Project-Oriented Problem-Based Framework for Teaching Computer Programming", Organized by World Engineering Education Forum 2017, 16 November 2017, Kuala Lumpur, organized by International Federation of Engineering Education Societis and Society of Engineering Education Malaysia.
 - 24 Invited speaker for Curricular Service Learning Session, the 6th Regional Conference on Engineering Education 2016 (RCEE2016), 9-10 August 2016-Universiti Teknologi Malaysia, Kuala Lumpur.
 - 25 Keynote Speaker, "A Smart Learning Education Project for Generic Skills Development", The 7th International Conference on Internet (ICONI 2015), 13-15 December 2015, Grand Millennium Hotel, Kuala Lumpur, Malaysia, organized by Korean Society For Internet Information.
 - 26 Invited speaker, "iCare My Aim: Ceramah Hala Tuju ke Pengajian Tinggi", School Holiday Programs, 19 March 2015, Organized by Perbadanan Perpustakaan Awam Johor Cawangan Bandar Penawar.
 - 27 Invited speaker, "Pendedahan Etika dan Keselamatan Aktiviti Dalam Talian", IEEE-iCARE-PEKA workshop, Dewan Bandaran, Bandar Penawar, Johor, 23 October 2013, Organized by IEEE, UTM & KEJORA.
 - 28 Invited speaker, "Quality Software for Quality Life", Software Engineering Seminar, 15th October 2011, Organized by Universiti Teknikal Malaysia Melaka (UTEM).
 - 29 Plenary Lecture-Invited speaker, "Component-Based Software Engineering of Embedded Software in Resource Constrained Real-Time Systems", Brown Bag Seminar, 17 April 2008, Motorola, Penang.