

Profile Image

## PROF. MADYA IR. DR. KHAIRI BIN ABDUL RAHIM

PENSYARAH UNIVERSITI DS14

### CONTACT

**Phone:** 86501

**E-mail:**

khairiabdulrahim@usim.edu.my

**Faculty:** Fakulti  
Kejuruteraan Dan Alam  
Bina

### SUPERVISION

PhD - Completed: 8, O.  
0

Master - Completed: 2,  
Ongoing: 0

### AREAS OF EXPERTISE

Navigation And Positioning System

Satellite Geodesy And Positioning

Digital Image Processing Algorithm And Techniques

### ACADEMIC QUALIFICATION

PhD in Kejuruteraan (2012)

Master in Kejuruteraan (2007)

Bachelor in Kejuruteraan (2001)

### RESEARCH

#### 1. SMART AQUAGUARD: IOT-POWERED WATER QUALITY MONITORING FOR SUSTAINABLE AQUATIC MANAGEMENT

2025 GERAN KPT ON GOING CO-RESEARCHER

#### 2. QURANIC SIGN LANGUAGE DETECTION SYSTEM USING LSTM NEURAL NETWORK

2024 GERAN PENYELIDIKAN USIM ON GOING MAIN RESEARCHER

#### 3. TAARIQ: DESIGN AND DEVELOPMENT OF AN AI-BASED HUMANOID ROBOT

2023 GERAN PENYELIDIKAN KHAS ON GOING CO-RESEARCHER

#### 4. DEVELOPMENT OF MOBILE APPLICATION FOR "EDUCATIONAL GAMES FOR KIDS WITH LEARNING DISABILITIES: KID WONDERS - KINDERS"

2022 GERAN PENYELIDIKAN AGENSI KERAJAAN COMPLETED CO-RESEARCHER

#### 5. INVARIANT KALMAN FILTERING FOR LOW-COST PEDESTRIAN NAVIGATION SYSTEM

2021 GERAN PENYELIDIKAN USIM ON GOING MAIN RESEARCHER

# RESEARCH

---

## 6. IMPROVED INCENTIVE PRICING MODELS OF INTERNET UNDER MULTIPLE QOS NETWORKS

2019 GERAN KPT ON GOING CO-RESEARCHER

## 7. REDUCING THE CALIBRATION EFFORT OF INDOOR POSITIONING SYSTEMS USING DISCRETE FOURIER AND WAVELET TRANSFORMS

2018 GERAN PENYELIDIKAN USIM ON GOING CO-RESEARCHER

## 8. NEW MOTION SEGMENTATION FOR VEHICLES IN URBAN TRAFFIC SCENES

2018 GERAN PENYELIDIKAN USIM COMPLETED MAIN RESEARCHER

## 9. MIZAN SOLAR HOME MODEL FOR SUSTAINABLE LIVELIHOOD

2017 GERAN PENYELIDIKAN KHAS COMPLETED CO-RESEARCHER

## 10. DETERMINATION OF OPTIMISED ORIENTATION OF A COST-EFFECTIVE PASSIVE PHOTOVOLTAIC SOLAR CELLS PLATFORM FOR MAXIMUM SOLAR POWER EXTRACTION IN EQUATORIAL LATITUDES

2015 GERAN PENYELIDIKAN PENTADBIR COMPLETED CO-RESEARCHER

## 11. A NEW TOPOLOGY SEGMENTATION ALGORITHM FOR X-RAY IMAGES

2013 GERAN KPT COMPLETED CO-RESEARCHER

## 12. A FORMULATION OF AN ENHANCED AIRLIGHT DETECTION ALGORITHM FOR OUTDOOR IMAGES

2013 GERAN KPT COMPLETED MAIN RESEARCHER

## 13. AUTOMATIC IMAGE ENHANCEMENT TOOL FOR POOR VISIBILITY OUTDOOR IMAGES

2013 GERAN MOSTI COMPLETED MAIN RESEARCHER

## 14. EVALUATING NETWORK PERFORMANCE OF DEDICATED WIFI ROUTERS

2013 GERAN PENYELIDIKAN INSENTIF COMPLETED MAIN RESEARCHER

## 15. OPTIMUM FITNESS FUNCTION ON HEURISTIC SEARCH EVALUATION FOR SOLVING TIMETABLING ISSUES

2012 GERAN PENYELIDIKAN USIM COMPLETED CO-RESEARCHER

## 16. AUTOMATED SEGMENTATION USING ADAPTIVE K-MEAN CLUSTERING FOR ACUTE MYELOID LEUKEMIA (AML)

2012 GERAN PENYELIDIKAN PENTADBIR COMPLETED CO-RESEARCHER

# PUBLICATION

---

## 1. INVARIANT EXTENDED KALMAN FILTER FOR LOW-COST FOOT-MOUNTED INERTIAL PEDESTRIAN NAVIGATION

2024 IEEE INTERNATIONAL CONFERENCE ON AUTOMATIC CONTROL AND INTELLIGENT SYSTEMS (I2CACIS)

2024 PROCEEDING SCOPUS MAIN AUTHOR

## 2. KEMBARA PASCAKEDOKTORAN DI KANADA, UNITED KINGDOM & BELGIUM

2024 BOOK CO-AUTHOR & CO-EDITOR

## 3. FROM MELAKA TO NOTTINGHAM

THE STORIES BEHIND SUCCESSFUL PHDS: PATIENCE, HUMILITY AND DEVOTION: THE ODYSSEY OF KNOWLEDGE

2024 CHAPTER IN BOOK MAIN AUTHOR

## 4. IMPROVED INCENTIVE PRICING MODEL OF WIRELESS PRICING SCHEME WITH END-TO-END DELAY ATTRIBUTE

SRIWIJAYA INTERNATIONAL CONFERENCE ON BASIC AND APPLIED SCIENCE

2023 PROCEEDING SCOPUS CO-AUTHOR

## 5. ADAPTIVE CARDINAL HEADING AIDED FOR LOW-COST FOOT-MOUNTED INERTIAL PEDESTRIAN NAVIGATION

INTERNATIONAL JOURNAL OF INTEGRATED ENGINEERING

2021 JOURNAL SCOPUS MAIN AUTHOR / CONTACT PERSON IN USIM

## 6. IMPROVED INCENTIVE PRICING WIRELESS MULTI-SERVICE SINGLE LINK WITH BANDWIDTH ATTRIBUTE

INTERNATIONAL JOURNAL OF ADVANCED COMPUTER SCIENCE AND APPLICATIONS (IJACSA)

2021 JOURNAL JCR CO-AUTHOR

## 7. IMPROVED MODEL OF INTERNET PRICING INCENTIVE MECHANISM BASED ON MULTI BOTTLENECK LINKS IN MULTI QOS NETWORKS

3RD INTERNATIONAL CONFERENCE ON ELECTRICAL, COMMUNICATION AND COMPUTER ENGINEERING (ICECCE)

2021 PROCEEDING NON-INDEX CO-AUTHOR

## 8. FINITE-HORIZON LQR CONTROL OF QUADROTOR ON SE2\_3

IEEE ROBOTICS AND AUTOMATION LETTERS

2020 JOURNAL WOS MAIN AUTHOR / CONTACT PERSON IN USIM

## 9. A NEW SPATIO-TEMPORAL BACKGROUND?FOREGROUND BIMODAL FOR MOTION SEGMENTATION AND DETECTION IN URBAN TRAFFIC SCENES

NEURAL COMPUTING & APPLICATIONS

2019 JOURNAL ISI, SCOPUS AND ERA CO-AUTHOR

## 10. DYNAMIC FEATURES DESCRIPTOR FOR ROAD USER RECOGNITION USING HIERARCHAL GRAPH DYNAMIC GRADIENT PATTERN

INTERNATIONAL JOURNAL OF RECENT TECHNOLOGY AND ENGINEERING

2019 JOURNAL SCOPUS CO-AUTHOR

## 11. A NEW SPATIO-TEMPORAL BACKGROUND?FOREGROUND BIMODAL FOR MOTION SEGMENTATION AND DETECTION IN URBAN TRAFFIC SCENES

NEURAL COMPUTING AND APPLICATIONS

2019 JOURNAL WOS CO-AUTHOR

## 12. OUTCOME BASED EDUCATION FOR ENGINEERING PROGRAMME: A CASE STUDY OF USIM

2019 BOOK CO-AUTHOR

## 13. INTELLIGENT ROAD TRANSPORTATION SYSTEMS

ADVANCES IN SUSTAINABLE LIVING: BUILT ENVIRONMENT AND BUILDING TECHNOLOGY

2019 CHAPTER IN BOOK CO-AUTHOR

# PUBLICATION

---

## 14. REAL-TIME FRAMEWORK FOR IMAGE DEHAZING BASED ON LINEAR TRANSMISSION AND CONSTANT-TIME AIRLIGHT ESTIMATION

INFORMATION SCIENCES

2018 JOURNAL WOS CO-AUTHOR

## 15. CHAPTER 3: INNOVATION

MIZANHOME FROM IDEAS TO REALITY

2018 CHAPTER IN BOOK CO-AUTHOR

## 16. PACKET LOSS RATE DIFFERENTIATION IN SLOTTED OPTICAL PACKET SWITCHING OCDM/WDM

TELKOMNIKA

2017 JOURNAL SCOPUS CO-AUTHOR

## 17. SIGNALING AND SCHEDULING WIMAX GATEWAY DESIGN BASED ON RESOURCE RESERVATION PROTOCOL

INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY

2017 JOURNAL WOS CO-AUTHOR

## 18. A USER REQUIREMENT STUDY TOWARDS THE DEVELOPMENT OF AN INTEGRATED GRADUATE PORTAL (IGP) FOR GRADUATE MARKETABILITY

INTERNATIONAL SUMMIT ON EMPLOYABILITY AND SOFT SKILLS (ISESS2017)

2017 PROCEEDING NON-INDEX MAIN AUTHOR

## 19. DEVELOPMENT OF INTEGRATED GRADUATE PORTAL (IGP) FOR GRADUATE MARKETABILITY

ACADEMICS WORLD 76TH INTERNATIONAL CONFERENCE

2017 PROCEEDING NON-INDEX MAIN AUTHOR

## 20. TEST

2017 POLICY

## 21. INTENSITY ENHANCEMENT ON OUTDOOR IMAGES

JURNAL TEKNOLOGI

2016 JOURNAL SCOPUS CO-AUTHOR

## 22. BACKGROUND SUBTRACTION IN URBAN TRAFFIC VIDEO USING RECURSIVE SIGMA-DELTA MIXTURE MODEL

JOURNAL OF ENGINEERING AND APPLIED SCIENCES

2016 JOURNAL SCOPUS CO-AUTHOR

## 23. TRAFFIC SURVEILLANCE: A REVIEW OF VISION BASED VEHICLE DETECTION, RECOGNITION AND TRACKING

INTERNATIONAL JOURNAL OF APPLIED ENGINEERING RESEARCH

2016 JOURNAL SCOPUS CO-AUTHOR

## 24. CUMULATIVE FRAME DIFFERENCING FOR URBAN VEHICLE DETECTION

FIRST INTERNATIONAL WORKSHOP ON PATTERN RECOGNITION

2016 PROCEEDING NON-INDEX CO-AUTHOR

## 25. ROTATING A MEMS INERTIAL MEASUREMENT UNIT FOR A FOOT MOUNTED PEDESTRIAN NAVIGATION

JOURNAL OF COMPUTER SCIENCE

2015 JOURNAL SCOPUS MAIN AUTHOR

## 26. OPTIMIZATION OF FDL BUFFERS AND COST FUNCTION FOR CONTENTION RESOLUTION IN OCDM/WDM

2015 IEEE 12TH MALAYSIA INTERNATIONAL CONFERENCE ON COMMUNICATIONS (MICC 2015)

2015 PROCEEDING NON-INDEX CO-AUTHOR

# PUBLICATION

---

## 27. SINGLE IMAGE ENHANCEMENT IN VARIOUS WEATHER CONDITIONS USING INTENSITY AND SATURATION DETERIORATION RATIO

2015 INTERNATIONAL CONFERENCE ON COMPUTER, CONTROL, INFORMATICS AND ITS APPLICATIONS (IC3INA 2015)

2015 PROCEEDING NON-INDEX CO-AUTHOR

## 28. ON MAGNETOMETER HEADING UPDATES FOR INERTIAL PEDESTRIAN NAVIGATION.

GYROSCOPY AND NAVIGATION

2014 JOURNAL SCOPUS MAIN AUTHOR

## 29. INCREASED ERROR OBSERVABILITY OF AN INERTIAL PEDESTRIAN NAVIGATION SYSTEM BY ROTATING IMU.

JOURNAL OF ENGINEERING AND TECHNOLOGICAL SCIENCES

2014 JOURNAL SCOPUS MAIN AUTHOR

## 30. CONTROLLING ALGORITHM FOR ENERGY-CONSUMPTION, RADIO BANDWIDTH AND SIGNAL STRENGTH DEPLOYING SINGLE FITNESS FUNCTION TO SOLVE COVERAGE AREA PROBLEMS.

ADVANCE SCIENCE LETTERS

2014 JOURNAL SCOPUS CO-AUTHOR

## 31. INTENSITY ENHANCEMENT ON OUTDOOR IMAGES.

3RD INTERNATIONAL CONFERENCE OF INTERACTIVE DIGITAL MEDIA

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 32. ESTIMATION OF SKYLIGHT VALUE IN HAZY OUTDOOR IMAGES.

WORLD SYMPOSIUM ON COMPUTER APPLICATIONS AND RESEARCH.

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 33. FUZZY LOGIC-BASED APPROACH TO ENHANCE VIDEO IN REAL TIME

POSTGRADUATE COLLOQUIUM OF FACULTY OF SCIENCE AND TECHNOLOGY

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 34. ASPEK PERUNDANGAN BAGI KEMUNGKINAN SALAHLAKU PENGGUNA MEDIA SOSIAL

SEMINAR TEKNOLOGI MAKLUMAT DAN MASYARAKAT (STMM2014)

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 35. REAL TIME VIDEO ENHANCEMENT FOR VARIOUS WEATHER CONDITIONS USING DARK CHANNEL AND FUZZY LOGIC

2ND INTERNATIONAL CONFERENCE ON COMPUTER AND INFORMATION SCIENCES

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 36. THE PERFORMANCE OF OCDM/WDM WITH BUFFERING BASED ON SHARED FIBER DELAY LINE

8TH INTERNATIONAL CONFERENCE OF INFORMATION, COMMUNICATION TECHNOLOGIES AND SYSTEMS.

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 37. STUDENTS' PERSPECTIVE TOWARDS THE DEVELOPMENT OF THE INTEGRATED GRADUATE PORTAL FOR GRADUATE MARKETABILITY.

POSTGRADUATE COLLOQUIUM OF FACULTY OF SCIENCE AND TECHNOLOGY, USIM

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 38. ON THE OPTIMAL COVERAGE AREA FOR SOLVING ENERGY-EFFICIENT PROBLEM IN WIRELESS SENSOR NETWORK

3RD INTERNATIONAL CONFERENCE ON GLOBAL OPTIMIZATION AND ITS APPLICATION (ICOGOLA 2014)

2014 PROCEEDING NON-INDEX CO-AUTHOR

## 39. PRIORITY CONTROL SCHEDULING FOR DOWNLINK AND UPLINK IN WIMAX NETWORK

SECOND INTERNATIONAL CONFERENCE ON TECHNOLOGICAL ADVANCES IN ELECTRICAL, ELECTRONICS AND COMPUTER ENGINEERING (TAAECE2014) (TAAECE)

2014 PROCEEDING NON-INDEX CO-AUTHOR

# PUBLICATION

---

## 40. POSTGRADUATE COLLOQUIUM 2014 FACULTY OF SCIENCE AND TECHNOLOGY: TOWARDS HIGH QUALITY RESEARCH OF SCIENCE AND TECHNOLOGY

2014 BOOK CO-EDITOR

## 41. ROTATING MEMS IMU FOR PEDESTRIAN NAVIGATION

INTERNATIONAL CONFERENCE ON COMPUTER NETWORKS AND INFORMATION TECHNOLOGY (ICCNIT2013)

2013 PROCEEDING NON-INDEX MAIN AUTHOR

## 42. K-MEANS CLUSTERING FOR ACUTE LEUKEMIA BLOOD CELLS IMAGE

INTERNATIONAL CONFERENCE ON SOFT COMPUTING AND COMPUTATIONAL MATHEMATICS

2013 PROCEEDING NON-INDEX CO-AUTHOR

## 43. A FRAMEWORK OF THE INTEGRATED GRADUATE PORTAL FOR STUDENT MARKETABILITY

INTERNATIONAL LANGUAGE AND EDUCATION CONFERENCE (ILEC2013)

2013 PROCEEDING NON-INDEX CO-AUTHOR

## 44. ANALYSIS OF MOTION DETECTION OF BREAST TUMOR BASED ON TISSUE ELASTICITY FROM B MODE ULTRASOUND IMAGES USING GRADIENT METHOD OPTICAL FLOW ALGORITHM.

1ST INTERNATIONAL CONFERENCE ON ARTIFICAL INTELLIGENCE, MODELLING AND SIMULATION (AIMS 2013).

2013 PROCEEDING NON-INDEX CO-AUTHOR

## 45. PRACTICE THE PROPHET MUHAMMAD (SAW) NOBLE CHARACTERS VIA AN INTEGRATED GRADUATE PORTAL (IGP)

PIONEERING ISLAMIC SCIENCE, SPEARHEADING KNOWLEDGE

2013 CHAPTER IN BOOK CO-AUTHOR

## 46. USING CONSTRAINTS FOR SHOE MOUNTED INDOOR PEDESTRIAN NAVIGATION

THE JOURNAL OF NAVIGATION

2012 JOURNAL WOS MAIN AUTHOR

## 47. INVESTIGATING THE USE OF ROTATING FOOT MOUNTED INERTIAL SENSORS FOR POSITIONING

ION GNSS 2012

2012 PROCEEDING NON-INDEX CO-AUTHOR

## 48. PENGGUNAAN TEKNOLOGI MAKLUMAT DALAM MEMACU KEBOLEHPASARAN GRADUAN INSTITUSI PENGAJIAN TINGGI ISLAM (IPTI)

SEMINAR SERANTAU INSTITUSI PENGAJIAN TINGGI ISLAM (SEIPTI 2012)

2012 PROCEEDING NON-INDEX CO-AUTHOR

## 49. AIDING LOW COST INERTIAL NAVIGATION WITH BUILDING HEADING FOR PEDESTRIAN NAVIGATION

THE JOURNAL OF NAVIGATION

2011 JOURNAL WOS MAIN AUTHOR

## 50. INTEGRATING LOW COST IMU WITH BUILDING HEADING IN INDOOR PEDESTRIAN NAVIGATION

THE JOURNAL OF GLOBAL POSITIONING SYSTEM

2011 JOURNAL WOS MAIN AUTHOR

## 51. INVESTIGATING THE EFFECT OF ROTATING MEMS IMU FOR PEDESTRIAN NAVIGATION

THE EUROPEAN NAVIGATION CONFERENCE ON GLOBAL NAVIGATION SATELLITE SYSTEM (ENC-GNSS 2010)

2011 PROCEEDING NON-INDEX MAIN AUTHOR

## 52. INTEGRATION OF HEADING-AIDED MEMS IMU WITH GPS FOR PEDESTRIAN NAVIGATION

ION GNSS 2011

2011 PROCEEDING NON-INDEX CO-AUTHOR

# PUBLICATION

---

## 53. AIDING MEMS IMU WITH BUILDING HEADING FOR INDOOR PEDESTRIAN NAVIGATION

UBIQUITOUS POSITIONING, INDOOR NAVIGATION AND LOCATION BASED SERVICES (UPINLBS 2010)

2010 PROCEEDING NON-INDEX MAIN AUTHOR

## 54. PEDESTRIAN NAVIGATION WITH HEADING DRIFT CORRECTION

ROYAL INSTITUTE OF NAVIGATION (RIN-NAV10)

2010 PROCEEDING NON-INDEX MAIN AUTHOR

## 55. LOW-COST, HIGH ACCURACY POSITIONING FOR INDOOR NAVIGATION

DIGITAL FUTURE CONFERENCE 2010

2010 PROCEEDING NON-INDEX MAIN AUTHOR

## 56. RAPID WI-FI FINGERPRINT MAPPING FOR INDOOR NAVIGATION

ROYAL INSTITUTE OF NAVIGATION (RIN-NAV10)

2010 PROCEEDING NON-INDEX CO-AUTHOR

## 57. SATELLITE LINK MARGIN PREDICTION AND PERFORMANCE OF ASTRO MALAYSIA

INTERNATIONAL CONFERENCE ON SPACE SCIENCE AND COMMUNICATION

2009 PROCEEDING NON-INDEX MAIN AUTHOR

# CONSULTATION

---

## 1. TECHNICAL CONSULTANT FOR PREDICTIVE AND CORRECTIVE MAINTENANCE PROJECT, TRUCK MONITORING SYSTEM

JHC LOGISTICS

2021 NATIONAL

## 2. PERKHIDMATAN KONSULTANSI MEMBANGUNKAN PROGRAM SARJANA MUDA SAINS SENIBINA DENGAN KEPUJIAN KOLEJ UNIVERSITI YAYASAN SABAH (UCSF)

KOLEJ UNIVERSITI YAYASAN SABAH (UCSF)

National

# AWARDS/RECOGNITION

---

## 1. ANUGERAH PERKHIDMATAN CEMERLANG 2023

2024 UNIVERSITY

## 2. ACADEMIC ADVISOR

UKM

2024 UNIVERSITY

## 3. RUBBER TREE TRUNK HUMIDITY INSPECTOR

PERTANDINGAN REKACIPTA INOVASI INTERNASIONAL & NASIONAL 2022 (PRIIN 2022)

2022 ANTARABANGSA SILVER

## 4. TOP 100 RESEARCHERS USIM ( 2013-2017)

TOP 100 RESEARCHERS

2018 UNIVERSITI CERTIFICATE OF APPRECIATION

## 5. USIM MIZAN HOMESTAY

THE INTERNATIONAL CONFERENCE AND EXPOSITION ON INVENTION (PECIPTA 17)

2017 UNIVERSITI BRONZE

## 6. MIZAN SOLARHOME

27TH INTERNATIONAL INVENTION & INNOVATION EXHIBITION 2017 (ITEX 2017)

2017 ANTARABANGSA SILVER

## 7. ROTATING IMU FOR PEDESTRIAN NAVIGATION

International Conference on Computer Networks and Information Technology

2013 ANTARABANGSA BEST PAPER AWARD