BASANT KUMAR

Asst. Professor /Program Head (Information Security)

OBJECTIVE

To obtain a leadership position where I can strategically contribute to academic excellence, institutional growth, and innovation in research and teaching. I aim to lead the development and launch of pioneering interdisciplinary programs, foster a culture of research and collaboration, and implement effective academic and administrative action plans. With a strong foundation in both academic and technical domains, I seek to utilize my strategic vision, planning capabilities, and commitment to quality education and research to drive sustainable institutional advancement.

CONTACT

PHONE:
+968 99615731

WEBSITE:
https://www.mcbs.edu.om/en

Linked in

https://www.linkedin.com/in/
dr-basant-kumar-
postdoctoral-researcher-ph-
d-mphil-mcm-873756a7/

iD ORCID

https://orcid.org/0000-0002-9587-3642

Google Scholar

Basant Kumar - Google Scholar

EMAIL:
basant.info@gmail.com

HOBBIES

Music
Travelling
Reading
Writing
Cricket and Football

ACADEMIC QUALIFICATIONS

Post-Doctorate
Lincoln University College (LUC), Malaysia & ERU, USA — 2025

Postgraduate Program in Blockchain Technology
Belhaven University, USA — 2024

Doctor of Philosophy (Ph.D.) in Computer Science (Cyber Security)
Banasthali University, India — 2013

Master of Computer Management (M.C.M.)
University of Pune, India — 1996

Bachelor of Computer Science (B.C.S.) 10+2+3
JVBI University, Rajasthan, India — 1996
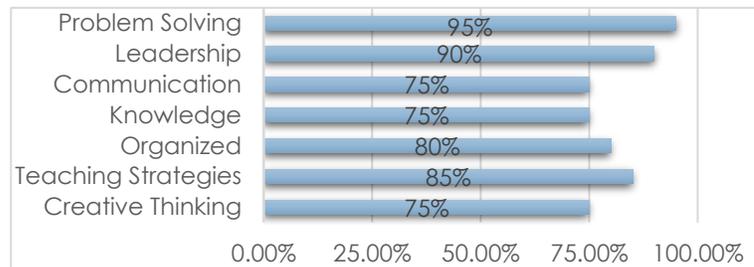*(Completed concurrently through permitted parallel enrollment)*

Bachelor of Arts (B.A.) 10+2+3
University of Delhi, India — 1994

CERTIFICATIONS

- ***Explainable AI for Cybersecurity, IIT Guwahati***

- ***Certification in AI & Blockchain from IBM***

- Certification in **Blockchain Technology** from KERALA Blockchain Academy & Blockchain Council

- **Learning to Teach Online**, certification from **The University of New South Wales, Sydney** (20th June 2020)

- Certified Computer Hacking Forensic Investigator (**CHFI), EC Council**, Certificate No ECC6904857213, 10 January 2020

- Certified Ethical Hacker (**CEH**), **EC COUNCIL**,26th July 2018, Certificate No ECC47685393418

- **CompTIA Security+** Certified, CAREER ID: COMP001020715803,23 May 2014

- **ICDL Certificate**,11th June 2009, License No GCC 080 243403

- **SOA & JAVA developer**   Edureka, certificate id: C83CY7VY

- IELTS(G) British Council: L:6.5 R:6.5 W:7   S:7   Band Score:7

SKILLS

Skill	Percentage
Problem Solving	95%
Leadership	90%
Communication	75%
Knowledge	75%
Organized	80%
Teaching Strategies	85%
Creative Thinking	75%

0.00%   25.00%   50.00%   75.00%   100.00%

Technical Skills

Programming & Scripting Languages:
C, C++, Python, Java (NetBeans/Eclipse), PHP (WAMP),
JavaScript, SQL

Web & Application Development:
HTML5, CSS3, JavaScript, ASP.NET (4.5+), VB.NET (4.5+),
J2EE, RESTful Web Services, Core Java, Adobe Dreamweaver
(CS4/CS5.5)

Database Management Systems (DBMS/RDBMS):
Oracle Database 11g, Microsoft SQL Server 2017, MySQL,
Microsoft Access

Operating Systems:
Windows (XP, 7, 8, 10, 11), Red Hat Linux, Ubuntu, Android OS

Networking & System Administration:
LAN/WAN Configuration, Network Hardening, Router & Switch
Configuration (Cisco Packet Tracer), Network Simulation (GNS3),
Red Hat Linux Administration

Cybersecurity & Threat Management:
Vulnerability Assessment, Penetration Testing, Network Security
Monitoring, Firewall Configuration, Intrusion Detection &
Prevention (Snort), Endpoint Protection, Digital Forensics

Cryptography & Secure Computing:
CrypTool, OpenSSL, Python Cryptography Libraries, Blockchain-
based Encryption Mechanisms, Key Management Systems

Blockchain & Emerging Technologies:
Blockchain Integration with Artificial Intelligence (AI), Smart Contracts, Distributed Ledger Technologies, Web3 Applications

Artificial Intelligence in Cybersecurity:
Machine Learning for Threat Detection, AI-based Intrusion Prevention, Predictive Security Analytics, Deepfake & Fraud Detection

Productivity & Documentation Tools:
Microsoft Office Suite (Word, Excel, PowerPoint, Project, Outlook, Publisher), LaTeX Documentation

AREAS OF EXPERTISE

- PHI and PII protection

- HIPPA, Privacy

- Risk Management

- Security Audits

- Change Management

- Identity & Access Management

- Asset Management

- Penetration Testing

- Business Continuity

- Threat Hunting

- Disaster Recovery

- Application Security

- Continuous Processes Improvement

- Cyber Kill Chain

- PCI Security

- Asset Hardening

- Vulnerability Management

- Incident Management

- Digital Forensics

- Project Management

- Root Cause Analysis

- Six Sigma Methodology

- Patch Management

- Biomedical Device Cybersecurity

- Cryptography/PKI

- Information Security Governance

- Threat Modelling

- Industrial Cybersecurity

- Malware Sandboxing

- Security policies and standards

- Cybersecurity Awareness Trainings

- Critical Data Management

- Legal and eDiscovery Security

FRAMEWORKS AND CONTROLS

NIST – Cybersecurity ♦ OWASP ♦ ISO 27001 ♦ PCI ♦ HIPPA ♦ SEI-CMMI ♦ COBIT

INFORMATION SECURITY ANALYST SKILLS

- Information Security: Ethical Hacking, Pen Testing: Kali Linux, Malware Analysis
- Analyzing Security System Logs, Security Tools, and Data
- Creating, Modifying, and Updating Intrusion Detection Systems (IDS)
- Creating, Modifying, and Updating Security Information Event Management (SIEM)
- Evaluating and Deconstructing Malware Software
- Familiarity with Security Regulations and Standards

- Implement and Maintain Security Frameworks for Existing and New Systems
- Strong Technical Background in Data Loss Prevention
- Supporting and Managing Security Services
- Training Organization on Security Measures

PROFESSIONAL EXPERIENCE (23 Years)

Adjunct Research Faculty (Lincoln Research Centre, Lincoln Global Postdoctoral Researcher (LGPR) Programme at Lincoln University College, Malaysia. May 2025-Present

- As Adjunct Research Faculty at Lincoln Research Centre under the Lincoln Global Postdoctoral Researcher Programme, I conduct advanced interdisciplinary research aligned with the center's priorities. I collaborate with faculty and students to develop innovative projects and scholarly publications while mentoring postgraduate researchers in research methods and academic writing. Additionally, I participate in academic events to share findings and expand the Centre's research network.

Program Head (Information Security) & Chair (Departmental Research Committee) Sep 2007 to Till Date

Modern College of Business and Science, Sultanate of Oman *(Affiliated with University of Missouri–St. Louis, USA)*

- **Coordinated the Master's in Information Technology program**, ensuring academic quality, effective delivery, and faculty excellence while overseeing program performance, faculty evaluation, and student satisfaction for continuous improvement.
- **Led accreditation and quality assurance initiatives**, developing academic standards, criteria, guidelines, and policies that supported successful **OAAA** and **ASIC** accreditation processes.
- **Provided strategic academic leadership** in curriculum development, quality assurance, and program enhancement for Computer Science, Cybersecurity, and IT-related programs.
- **Oversaw Research and Consultancy Services**, strengthening research productivity, external collaborations, grant acquisition, and alignment with institutional and national priorities.
- **Supervised capstone projects and research**, guiding students toward high-quality outcomes, including publications in **Scopus-indexed journals**.

- **Led strategic planning and policy implementation**, aligning academic programs with institutional vision, accreditation standards, and national higher education priorities.

- **Managed academic budgeting and resource allocation**, ensuring optimal utilization of faculty, facilities, technology, and research infrastructure.

- **Enhanced student success initiatives**, including academic advising systems, retention strategies, learning support services, and postgraduate progression pathways.

**Senior Faculty and Digital Teaching Program
Coordinator, Indian School Muscat, Oman Aug 2001 – Sept 2007**

- Acted as IT Coordinator, Cyber Olympiad Coordinator, and House Master; orchestrated digital learning initiatives.

- Introduced Moodle and flipped classroom strategies enhancing interactive teaching methodologies.

- Led professional development workshops in web design and IT tools for faculty development.

**Head – ICT Partnerships and Training Methodex Computer Technology Limited Pune, India
Jun 1997 – July 2001**

As Head – ICT Partnerships and Training, I led strategic collaborations with school(PM MODI Jr College, Mahabaleshwar, Maharashtra, India) and college(Seventh Day Adventist College, Surat,Gujarat,India) to enhance their IT infrastructure and digital learning capabilities. I oversaw the planning and execution of customized training programs for students and faculty, ensuring alignment with institutional goals and current technology standards. I managed cross-functional teams responsible for ICT deployment, user support, and service delivery across partner institutions. I played a key role in drafting MoUs, ensuring quality assurance, and reporting outcomes to stakeholders. My leadership fostered innovation and advanced digital transformation in the education sector.

ACADEMIC HONORS & AWARDS

2022	**Recipient of International Academic Excellence Award** By Western Sydney University, Australia, Elsevier's Mendeley http://www.i2or.com/
2018	Best academician of the year 2018 award by GECL https://geclawards.com/gecl-2018/img_3736/ https://geclawards.com/wp-content/uploads/2019/04/IMG_3738.jpg
2017-Present	OMAN CERT Professional Ambassador https://ambassadors.cert.gov.om/Professionals_en.aspx
2015	*As a **Subject Matter Expert** (SME) for the CompTIA, Washington, D.C.(USA)* https://certification.comptia.org/get-involved/become-a-subject-matter-expert/current-examplify-smes
2001-2007	Certificate of Appreciation for Service as a Cyber Olympiad Coordinator of Middle East Region.
2007-Present	Appreciation letter for Magnificent Contribution in Academic Excellence at MCBS

2001-2006	Appreciation letters from different departments of Indian School Muscat
2001-2003	Awarded Certificate for Displaying Bio Diesel Project Model in the National Level Jawaharlal Nehru Science Expo, Dehradun, India
1989-91	Indian Council of Agril. Research Nominee

THOUGHT LEADERSHIP

2024-Present	Sr IEEE Member
2025-Present	Eternal Reviewer of Gulf College
2024-Present	External Reviewer of The Research Council of Oman
2025-Present	External Reviewer of Sohar University, Oman
2025-Present	External Reviewer of UTAS, Oman
2022-Present	Chair, Departmental Research Task Force Committee at Modern College of Business & Sc
2019-Present	Teaching Learning Development and Resource Committee member at Modern College of Business & Sc(MCBS)
2019-Aug 2020	Research Ethics Review Committee member at Modern College of Business & Sc (MCBS)
2018-Present	IEEE Student Branch Chair at MCBS
2016-Present	Program Coordinator of Master in Information Technology(MIT) at MCBS
2017-Present	ISACA Student Branch Chair at MCBS
2015-Present	Program Coordinator of Information Security Program at MCBS
2013-2018	Board of Examiner for a PhD Thesis "Catastrophic risk assessment using integrated multicriteria Flood Vulnerability Index(FVI) for various Spatial and Temporal mining scales: North Bihar ,India Bharathiar University, Coimbatore University, Tamilnadu India
2016-2017	Chairperson of Library at Modern College of Business & Sc, Sultanate of Oman

2011-Present	External Reviewer of Oman Dental College for IT Program
2011-Present	External Project Guide of IGNOU Muscat Chapter for Master in Computer Application
2001-2007	Certificate of Appreciation for Service as a Cyber Olympiad Coordinator of Middle East Region.
2007-Present	Student Advisor for BSCS, BSIS and Associate Diploma in Information Technology Programs

<u>WORKSHOP/ SEMINAR/CONFERENCE PRESENTATION</u>

- ***Recipient of a Best Paper Presentation award for a paper entitled "Utilizing Packet Tracer Simulation to Modern Smart Campus Initiatives for a Sustainable Future" for IEEE the 12th International Conference on Smart Energy Grid Engineering (SEGE 2024) held in Ontario Tech University, Oshawa, Canada during August 18-20 2024.***

- ***Recipient of the Best Paper Award at the 2nd International Conference on Smart Cyber Physical Systems (ICSCPS-2026), graciously organized by the Department of Computer Science, CHRIST (Deemed to be University), Delhi NCR Sponsored by Department of Science & Technology Anusandhan National Research Foundation (ANRF), New Delhi and Springer(Publication partner).***

- *Presented Paper Titled: Blockchain, AI, and Green Cybersecurity: Exploring Synergies for a Sustainable Future The International Conference on Business and Technology (ICBTEdinburgh' 2025) on April 12-13, 2025 at The University of Edinburgh – United Kingdom organized by Euromid academy of Business & Technology.*
- *Presented the research paper titled, "Modified Proof of Reputation with Dynamic Scoring and Advanced Optimizations for Enhancing Blockchain Efficiency" to the International Conference: Smart Solutions for Modern Design, Business and Computer Innovations (OCMT'2025), held on April 16–17, 2025 at the OCMT Campus of Oman College of Management and Technology, Sultanate of Oman.*

- *A manuscript "Developing an Advanced Cybersecurity Framework and Blueprint: A Contemporary Approach to Counter Hacking through Reverse Engineering Techniques has been accepted for "International Conference on Smart Cyber Physical Systems (ICSCPS-Sept 13-14,2024),CHRIST University India and will be published in conference proceedings by Springer 'Smart Innovation,Systems and Technologies' ISSN: 2190-3018, Book Series. ISSN: 2190-3018 Indexed by SCOPUS, INSPEC, WTI Frankfurt eG, zbMATH, SCImago. All books published in the series are submitted for consideration in the Web of Science.*

- *A research paper entitled "Design and Execution of Secure Smart Home Environments on Visual Simulation Tool" was*

- *presented in an International Conference on Innovation in information technology and business (ICIITB)(Springer Nature) on November 9th and 10th, 2022 at MCBS, Oman.*

- *A manuscript "Design of Heart Rate Monitoring System Using Visual Simulation Tool" has been accepted for "International Conference on Smart Cyber Physical Systems (ICSCPS-Sept 13-14,2024),CHRIST University India and will be published in conference proceedings by Springer 'Smart Innovation,Systems and Technologies' ISSN: 2190-3018, Book Series. ISSN: 2190-3018 Indexed by SCOPUS, INSPEC, WTI Frankfurt eG, zbMATH, SCImago. All books published in the series are submitted for consideration in the Web of Science.*

- *A manuscript "Blockchain Technology in Higher Education: Opportuni1ties, Applications, and Network Security Challenge" has been accepted for "International Conference on Smart Cyber Physical Systems (ICSCPS-Sept 13-14,2024),CHRIST University India and will be published in conference proceedings by Springer 'Smart Innovation,Systems and Technologies' ISSN: 2190-3018, Book Series. ISSN: 2190-3018 Indexed by SCOPUS, INSPEC, WTI Frankfurt eG, zbMATH, SCImago. All books published in the series are submitted for consideration in the Web of Science.*

- *A research paper entitled " Blockchain in the Education Sector – A Real-time Application in the Computer Science Department at MCBS Oman" was presented in an International Conference on Innovation in information technology and business (ICIITB)(Springer Nature) on November 9th and 10th, 2022 at MCBS, Oman.*

- *A research paper entitled " Healthcare Information Exchange Using Blockchain and Machine Learning was presented in an International Conference on Innovation in information technology and business (ICIITB)(Springer Nature) on November 9th and 10th, 2022 at MCBS, Oman.*

- *A research paper entitled " IoT-Enabled Smart Cities: A Review of Security Frameworks, Privacy, Risks and Key Technologies " was presented in an International Conference on Innovation in information technology and business (ICIITB)(Springer Nature) on November 9th and 10th, 2022 at MCBS, Oman.*

- *A research paper entitled " The Use of Machine Learning in Digital Forensics " was presented in an International Conference on Innovation in information technology and business (ICIITB)(Springer Nature) on November 9th and 10th, 2022 at MCBS, Oman.*

- *A research paper entitled " Securing quantum communications l" was presented in an International Conference on Innovation in information technology and business (ICIITB)(Springer Nature) on November 9th and 10th, 2022 at MCBS, Oman.*

- *A research paper entitled " Blockchain in Securing the Data Integrity of College" was presented in an International Conference on Innovation in Information Technology and*

Business on 9th November 2022 at Modern College of Business and Science (MCBS), Sultanate of Oman

- *Conducted a workshop on "Does Remote Work Present a Major Cybersecurity Threat?" on 7th July 2022 at MCBS.*

- *Conducted a workshop on "Lecture Capture " on 23rd June 2022 at MCBS.*

- *Organized a workshop on "Blockchain" under the guidance of IEEE Information Security Student Chapter*
  Date: 2nd February at 10 am(Muscat) 4 :00 pm
  (AEST)   Mode: Live Webinar
  Resource Person:Dr Naveen Chilamkurti is currently a SMIEEE Professor and Head of Cybersecurity Discipline Director, La Trobe Cybersecurity Research Hub La Trobe University, Melbourne, Australia.

- *Organized a workshop on "Next Generation Skill" under the guidance of IEEE Information Security Student Chapter*
  Date: 16th February: LIVE WEBINAR at 10 am (GST)
  Resource Person: Mr Ashok Pandey

- *Organized a workshop on " Virtual World: It's not a game, it's your life stay safe! " under the guidance of IEEE Information Security Student Chapter*
  Date: 23rd February: LIVE WEBINAR at 10 am (GST)
  Resource Person: Dr Rakshit Tandon

- *Delivered an expert talk on "Blended Learning: A synthesis of best Practices" in "Indo-Muscat One-week Virtual Workshop on Research Writing skills-Workshop series-01" from 25th May 2020 to 29thMay 2020*
  (https://www.youtube.com/watch?v=3ofOGi0XIzM) with the collaboration of University Centre of Research and Development, Galgotias University-India.

- *Gave a presentation on Avenir 2019 – 'be future ready', a comprehensive project, designed and aimed at effectively guiding students and parents to chart out the future course of action after school education, was inaugurated at Indian School Seeb on October 10 ,2019 in the presence of a host of dignitaries, parents, teachers and students across Indian Schools in Oman. Addressed students about Information Security: A Paradigm shift in Higher Education*
  https://www.linkedin.com/in/dr-basant-kumar-873756a7/detail/recent-activity/shares/

- *Conducted a FOSS workshop on 27TH February 2015 at MCBS.*
- *Conducted a workshop on the fundamental concepts and best practices related to authentication, authorization, and access control (24th April 2014) at MCBS*
- *"Networking" workshop was organized on 17th Feb, 2013 at MCBS.*
- *Organized a workshop on " The Road User and Safety" on 26th March 2013 at MCBS*
- *Organized a workshop on "Dare to Dream" on 22nd April 2013 for all foundation level students as a career guidance workshop.*

- *Conducted a workshop for MCBS teaching staff members to give an emphatic presentation using Prezi Summer 1 2013*
- *Conducted a workshop on UML for graduating students during Fall 2013*
- *Organized a Global Entrepreneurship Week (GEW) w.e.f Nov. 18-24,2013 in MCBS*
- *Organized an Hour of Code workshop w.e.f 8-15th Dec 2013 at MCBS.*
- *Conducted a workshop on UML (13th March 2014).Venue: MCBS*
- *One - 4 Days Workshop at MCBS on Database Connection ,Fall 2010*
- *One – 3 Days In house Training to ESL Department of MCBS on Microsoft Office 2007 ,Spring 2010*
- *One - 1 Day Workshop at MCBS on Networking Fundamentals, Fall 2011*
- *One – 1 Day Interactive Workshop at MCBS on Mobile Computing, Summer 1 2012.*
- *One-1 Day Interactive Workshop at MCBS on "Facebook", Spring 2012*
- *Coordinated a workshop on "Challenges & opportunities in IT career" on 1st Dec, 2012 at MCBS.*
- *Organized a workshop on "Leadership and Management" on 15th Dec, 2012 at MCBS.*
- *Organized a workshop on "3d Designer and Visualizer " on 26th Nov,2012 at MCBS "Database security - risks and control methods" ,presented in IEEE International*
- *Conference on Computer Communication and the Internet (ICCCI 2016) Oct. 13- 15, 2016 | Wuhan, China. www.iccci.org*
- *Major Field Test: An Assessment Tool Used For Program Learning Outcome*
- *Measurement. Journal of Computations & Modelling, vol.5, no.4, 2015, 97-104 ISSN: 1792-7625 (print), 1792-8850 (online) Scienpress Ltd, 2015*
- *CatchMe: Smartphone based Intelligent Black Emergency Alert Technology (IBEAT) System, Proceedings of "The 2nd International Conference on Applied Information and Communications Technology" - ICAICT 2014, Middle East College of Information Technology, Oman.*
- *Mobile Comprehensive Emergency Support System (MCESS) for Hospitals in Smartphones ,2nd INTERNATIONAL CONFERENCE On "Advancements in Computing Sciences, Information Techniques & Emerging E-Learning Technologies" (ACSITEET–2014) Organized by "Krishi Sanskriti" On 22nd-23rd February, 2014, Jawaharlal Nehru University, India*
- *Paper presented on "Emerging Paradigms and Practice in Information and Communication Technology and Management" in an International Conference from 26-28 July 2012 at GBU, India under supervision of University of Maryland Eastern Shore and FrostBurg State University USA.*
- *Paper presented on ICT ("Web based Program Assessment and Documentation") in an International Conference on 22-23rd March 2011, organized by Middle East College of Information Technology, Sultanate of Oman.*
- *Participated in International Symposium on Artificial Intelligence (2012) at Al Musanna College of Technology*

- *Attended workshop on "Advising" by Dr. Joseph Mani at MCBS(2012)*
- *Symposia, Conferences, Research Meetings and Presentations*
- *Participated in a symposium on "Innovating Oman" on 14th Feb 2012 at Hayat Regency Sultanate of Oman*
- *Attended a workshop on "Cloud Computing" at Al Bustan Palace, Oman organized by Microsoft on 27th Feb 2012.*
- *Coordinated Library Week at MCBS with effect from 25-28 Feb 2012 Imagine Cup" by Microsoft was introduced under my supervision on 28th Feb 2012 at Seminar Room.*
- *Attended a Lecture on "Changing conditions for Science, Technology, and Innovation: Hurdles and Opportunities" presented by Prof. Charles Wessner on Sat 10th March 2012 at Grand Hayatt Muscat in accordance with Research Council, Oman.*
- *Attended "Knowledge sharing & best practices" workshop at MCBS on 22nd Feb 2012.*
- *Participated in "IS Project Issues" by Dr Bhasi at MCBS(2012)*
- *Attended a Guest Lecture on "Information Security" at MCBS(2011)*
- *Attended workshop on "Advising" by Dr Joseph Mani at MCBS (2011)*
- *Attended a workshop on "challenges in Education " by Dr. Ahmed Al- naamany(2012)*
- *Attended WebCT User's conference on E-learning Technologies on Sept 6-7 2004 in ISM, MUSCAT*
- *Participated International Conference on Higher Education & Emerging Trends in Information Technology on 29-30 March 2005 in Mazoon College, Oman.*
- *Attended training program on "E-Learning", organized by Webtek India (P) Ltd (IBM Rational Channel Partner), between 9-11th of July 2005, at Banasthali Vidyapith, Rajasthan*
- *Attended In House training program on "Windows Vista & Networking", organized by Bahwan Cybertech LLC(A leading IT Firm of Middle East)*
- *Attended Annual conference of CERT on 30th Dec 2012 at Al Bustan Palace.*
- *Attended an "Open Source Software Conference" on 19th Feb 2013 at SQU.*
- *Attended a seminar on "Microsoft Open Door" on 24th Feb, 2013 at Al Bustan Palace.*
- *Attended e- conference on "Cyber-Resilience: the Core of Modern Risk Management" on 17th April 2013.*
- *Attended in Security Summit , sponsored by Information Technology Authority, Oman*

Publications in Journal and Conference Proceedings
https://orcid.org/0000-0002-9587-3642

1. Ramalingam, V., **Kumar, B**., Gupta, S. K., Alsekait, D. M., & AbdElminaam, D. S. (2026). *A hybrid federated learning framework with generative AI for privacy-preserving and sustainable security in IoT-enabled smart environments. Scientific Reports, 16,* Article 3071. https://doi.org/10.1038/s41598-025-31769-6

2. **B. Kumar**, S. K. Gupta, R. Dwivedi, D. M. Alsekai, D. S. AbdElminaam, and O. Kilickaya, "Artificial intelligence driven approach for securing backup data and enhancing cyber resilience in sustainable smart infrastructure," *Scientific Reports*, 2026, in press.

3. R. Dwivedi, **B. Kumar**, V. Mishra, H. Jassim, and O. Kilickaya, "Evaluating differential privacy mechanisms in machine learning with emphasis on utility and robustness," *Emerging Science Journal*, in press, 2026.

4. **B. Kumar** and M. S. Shaikh, "ZigBee based low latency IoT and AI integrated framework for real time telehealth monitoring," *Emerging Science Journal*, in press, 2026.

5. **Basant Kumar**, A. Ahmed, S. K. Gupta, R. C. Poonia, and R. Dwivedi, "Sustainable cybersecurity in the Industry 6.0: Leveraging AI-augmented green resilience through ethical hacking and reverse engineering," *Scientific Culture*, vol. 12, no. 2, pp. 28–41, 2026, doi: 10.5281/zenodo.1222603.

6. **Kumar, B.**, Blockchain-based authentication model for education data storage. *International Journal of Industrial and Systems Engineering*. https://doi.org/10.1504/IJISE.2025.150224

7. P. Vijaya,Joseph Mani,**Basant Kumar**,Hothefa Shaker,Rajeev Rajendran (2025). Leveraging Hybrid Deep Q Learning for Early Identification of At-Risk Students,
Emerging Science Journal: DOI
https://doi.org/10.28991/esj-2025-sied1-06
Journal volume & issue
Vol. 9 ,pp. 95 – 111

8. Vijaya, P., Chander, S., Rodrigues, A., Yoosef, M. S., Mani, J., **Kumar, B.**, & Jassim, H. (2025). Exponentially carpet weaving optimization enabled GoogleNet for melanoma classification using skin images. *Journal of Information Systems Engineering and Management, 10*(15s). https://doi.org/10.52783/jisem.v10i15s.2520

9. Kumar, B., Balasubramanian, P. N., & Al-Husseini, E. (2025). *Multimodal natural language processing: Integrating text, vision, and speech for enhanced artificial intelligence understanding*. **Journal of Information Systems Engineering and Management, 10**(59s). https://www.jisem-journal.com/index.php/journal/article/view/12989/6063

10. **Kumar, B.,** Padmanabha, V., P., J., & Dwivedi, R. (2024). Utilizing Packet Tracer simulation to modern smart campus initiatives for a sustainable future. In *2024 IEEE 12th International Conference on Smart Energy Grid Engineering (SEGE)* (pp. 97–102). IEEE. https://doi.org/10.1109/SEGE62220.2024.10739478

11. Seetharaman, S. K., & Kumar, B. (2025, December 3). Robotic system to identify finite number of significant image frames on large video data using unsupervised machine learning technique. MDPI. https://sciforum.net/paper/view/27977

12. Ahmad, A., Mani, J., Kumar, B., Vijaya, P., Shaker, H. (2025). Sustainable Cryptographic Keys Using LFSRs Models. In: Awwad, B. (eds) AI and IoT: Driving Business Success and Sustainability in the Digital Age. Studies in Systems, Decision and Control, vol 590. Springer, Cham. https://doi.org/10.1007/978-3-031-88874-8_10

13. Rahil, A. M., Shaker, H., Kumar, B., & Sharef, Z. T. (2025). Vulnerability detection: Dynamic analysis of web applications and assessment of penetration testing tools. In B. Awwad (Ed.), *AI and IoT: Driving Business Success and Sustainability in the Digital Age* (Vol. 2, pp. 801–811). Springer, Cham. https://doi.org/10.1007/978-3-031-88874-8_71

14. Ahmad, A., Kumar, B., Naeem, M., & Abraham, R. (in press). *A comparative study of support vector machines and regression models in predictive analysis*. In *Proceedings of the 10th International Marmara Scientific Research and Innovation Congress* (June 27–28, 2025), Istanbul, Turkey. https://www.isarconference.org/marmara

15. Ahmad, A., Kumar, B., Suleiman, N., & Abraham, R. (in press). *Integrating IoT sensor networks with morphological image processing for enhanced precision agriculture*. In *Proceedings of the IKSAD Congress – Sivas International Conference on Scientific and Innovation Research-IV* (May 30–31, 2025), Sivas University of Science and Technology, https://www.iksadkongre.org

16. Ahmad, A., & Kumar, B. (in press). *Redefining management science: New coordinates in the era of digitization and AI*. In *Proceedings of the International Conference on Global Practice of Multidisciplinary Scientific Studies – X* (May 23–28, 2025). https://www.iksadkongre.org

17. Kumar, B., Dwivedi, R., Sreemoy, & Gupta, S. K. (in press). *Blockchain, AI, and green cybersecurity: Exploring synergies for a sustainable future*. In *Proceedings published by Springer Nature*.

18. Pasha, M. M. M., Sandeep, J., Poonia, R. C., & Kumar, B. (in press). *Modified proof of reputation with dynamic scoring and advanced optimizations for enhancing blockchain efficiency*. In **Proceedings of the International Conference on Smart Solutions for Modern Design, Business and Computer Innovations (OCMT'2025)**. Springer.

19. Dwivedi, R., Mishra, V., & Kumar, B. (in press). *Integrating differential privacy in federated learning for healthcare data analytics*. To appear in **Proceedings of the 16th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT), July 6–11, 2025**, IIT Indore, Madhya Pradesh, India. IEEE Xplore.

20. **Kumar, B**. (in press). Adaptive resource management for improving performance in modern operating systems. *International Journal of System of Systems Engineering*.
DOI: 10.1504/IJSSE.2027.10071598

21. **Kumar, B. (**in press**).** Harnessing core-accelerated machine learning for enhanced knowledge acquisition in system integration. *International Journal of Systems Science and Engineering*. https://doi.org/10.1504/IJSSE.2026.10064490

22. *Kumar, B., Ali, H., Nassor, I., & Sandeep, J. (2024). Blockchain technology in higher education: Opportunities, applications, and network security challenges. In *Smart Cyber Physical Systems*, Proceedings of ICSCPS 2024 (pp. 529-542). Springer, Singapore. https://doi.org/10.1007/978-981-96-2182-8_40*

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72. **Kumar, B**. (2013). J2ME as a development platform for smartphones. *International Research Journal of Management Science & Technology, 3*(3). http://www.irjmst.com

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74. **Kumar, B**. (2011). Development of a web-based program assessment and documentation system. In *Proceedings of the MECIT International Conference on Applied ICT* .ISBN: 978-93-5107-285-0.

EXPERIENCE IN CONFERENCE COMMITTEE

Technical Committee Member
5th International Conference on Electronics and Sustainable Communication Systems (ICESC 2024)"
Conference URL: http://icescs.com/

Organizing Committee Member
2nd International Conference on Innovation in Information Technology and Business (ICIITB 2024)
ICIITB (mcbs.edu.om)

Technical Committee Chair
2nd International Conference on Innovation in Information Technology and Business (ICIITB 2024)
Committees – ICIITB (mcbs.edu.om)

Organizing Committee Member
1st International Conference on Innovation in Information Technology and Business (ICIITB 2022)
ICIITB (mcbs.edu.om)

Technical Committee Chair
1st International Conference on Innovation in Information Technology and Business (ICIITB 2022)
Committees – ICIITB (mcbs.edu.om)

Reviewer

- 1st International Conference on Innovation in Information Technology and Business (ICIITB 2022)
  https://equinocs.springernature.com/

- International Conference on Computational Sciences and Sustainable Technologies (ICCSST-2023) HELD ON 8-9 May 2023,Deptt of Comp Sc, Christ University, Bangalore
  https://www.iccsst.com/

- The Research Council of Oman

- Bentham Science Publishers

- Springer Nature

- Journal of Intelligent Communication (JIC)!

External Reviewer

- ❖ Foundation Program Reviewer
  Gulf College
  Muscat, Sultanate of Oman

- ❖ Oman Dental College
  Foundation Program
  Muscat, Sultanate of Oman

- ❖ Research Project
  The Research Council of Oman

Conference Convener
International Conference on Computational Sciences and Sustainable Technologies (ICCSST-2023) HELD ON 8-9 May 2023,Deptt of Comp Sc, Christ University, Bangalore
https://www.iccsst.com/

Session Chair
International Conference on Computational Sciences and Sustainable
Technologies (ICCSST-2023) HELD ON 8-9 May 2023,Deptt of Comp Sc,
Christ University, Bangalore
https://www.iccsst.com/

Program Committee Member
3rd World Conference on February 07-08, 2024 | Dubai, United Arab
Emirates Engineering, Technology and Applied Science
https://eurasiaconferences.com/events/dubai/2024/engineering-
technology-and-applied-science/committee

Technical program committee
(TPC) of ICESC 2022
3rd International conference on Electronics and Sustainable Communication Systems
ICESC 2022

Technical program committee
ICESC - 2024 (icescs.com)

Technical committee member
third International Conference on Artificial Intelligence and Smart
Systems (ICAIS 2023).
Conference URL: http://icaise.in/2023/

Advisory Committee Member
 www.krishisanskriti.org

BOOK

Operating Systems
Author: Er. Santosh kumar, Dr. Lowlesh Nandkishor Yadav, Dr. Ajay Kumar,
Dr. Basant Kumar
Publisher: REST Publisher
ISBN: 978-81-988098-5-8

BOOK CHAPTERS

1. *Basant Kumar* ,Sulaiman Al Rawahi , Abdullah Al Kharusi,
Iot Technologies: Remote Health Monitoring Systems, Security Risks
and Recommendations:
Novel Research Aspects in Mathematical and Computer Science Vol.
7, 5 August 2022 , Page 37-50
https://doi.org/10.9734/bpi/nramcs/v7/3484A
Published: 2022-08-05
ISBN 978-93-5547-772-9 (Print)
ISBN 978-93-5547-773-6 (eBook)

2. *Basant Kumar* , Majid Al Ismaili
Incorporating Internet of Things Applications in Healthcare:
Current Overview on Science and Technology Research Vol. 1, 5
August 2022 , Page 37-49
https://doi.org/10.9734/bpi/costr/v1/3485A

INSTITUTIONAL RESEARCH

- Mathematical Model to Predict at Risk Students using Hybrid optimized Deep Q network (2020)
- Exploring the Integration of Blockchain based Digital Technology for a Smart Educational Framework at Modern College of Business and Science: A Systematic Review (2022)
- Development of an ICT Tool for automating ABET Assessment Processes
- Application of Data Analytics to understand the dynamics of student's dropout
- Investigation and analysis of students' performance at the Modern College of Business and Science

RESEARCH GRANT

Research projects recently completed / currently in progress:

- Vehi-Trak - A Smart and Secure Blockchain System to Track Vehicle History in the Sultanate of Oman (TRC Fund- OMR 6200)
  project successfully submitted to The Research Council of Oman in 2023.
- Post-Pandemic Education: How Online teaching challenges shape the future of Education in Oman(TRC Fund- OMR 4000)

- Mathematical Model to Predict At-Risk Students using Hybrid Optimized Deep Q Network (Institutional Research Fund – OMR 800)

- Application of Data Analytics to understand the dynamics of student's dropout(Institutional Research Fund – OMR 800)

- Exploring the Integration of Blockchain based Digital Technology for a Smart Educational Framework at Modern College of Business and Science: A Systematic Review OMR 800)

- Working as Principal Co Investigator for Fractional White Smell Agent Optimization trained Transfer Learning for Melanoma Classification for Research Grant of The Research Council of Oman with effect from 2023.

PATENT

- Inventor, Basant Kumar (2026). *A machine learning–based fraud detection model for digital payment systems* (Indian Patent No. 202541132066). Indian Patent Journal.

- Foldable Smart Glass Keyboard with Adaptive Surface & Tactile Feedback

- AI-Powered Modular Desktop Cube System for Adaptive Computing

- Quantum-Dot Powered Anti-Tamper USB Security Key

- Wearable Nano-Biosensor Ring for Secure Biometric Login

- Nano-Sealed Tamper-Proof Chip Housing with Heat Signature Monitoring

- Patent Title: Foldable Smart Glass Keyboard with Adaptive Surface & Tactile Feedback
- Indian Utility Patent(A machine learning Model for Fraud Detection in Digital Payment Systems)

   UK Design Patent
- (Touchscreen Language Learning Tablet)

- Energy efficient Microprocessor Design for High performance computing

RESEARCH PROJECT GUIDANCE

Post Doctoral Supervision

- Currently engaged as a volunteer Postdoctoral supervisor of 10 candidates for Lincoln University College, Malaysia

Doctoral Supervision

Ahmed Mohammed Saif Al Rahbi
Malaysian Institute of Information Technology
University Kuala Lumpur
PhD

Aisha Mohammed Ahmed AlZaabi
PhD :External Reviewer
Faculty of Computer Science & Mathematics, University Teknologi MARA, Malaysia (UiTM)

Binu Rai
Registration Number   : AU/PHD/25/10287
Phd: external reviewer
Alliance University,Bangalore(India)

Said Khalfan Said Alwahaibi
University Technology Malaysia,
Ph.D. – INFORMATION SECURITY – BLUE PRINT FOR HACKING COUNTERMEASURE FRAMEWORK, 2013

BHARATHIAR University, India
Ph.D. – INFORMATION SECURITY – "Catastrophic risk assessment, using integrated multicriteria Flood Vulnerability Index (FVI) for various Spatial and Temporal mining scales: North Bihar India." 2018

Binary University Malaysia

Ph.D. – INFORMATION SECURITY- Cyber-attacks : Challenges faced by state owned companies, 2018

Birla Institute of Technology & Science – Waljat College of Applied Science – Muscat, Oman

MASTER OF SCIENCE IN SOFTWARE SYSTESMS – DATA MINING, 2007

Mazoon College ,Sultanate of Oman

M. *Tech (*COMPUTER SCIENCE) SECURE ONLINE BANKING, 2012

IGNOU – Muscat, Oman

FINAL YEAR PROJECT – MASTER IN COMPUTER APPLICATION – MCA, 2013 to Present

MCBS-Muscat, Oman

FINAL YEAR Capstone PROJECT – Tawasul (Communication between deaf and Dumb)

Master of Information Technology

- Effective approach towards Intrusion Detection & Pretention Systems in Implementing Défense in Depth : NOVEMBER 2017

- Design & development of a mobile application for clinical decision making in compliance with security requirments required by Oman healthcare industry : September 2019

- importance of building A Security Operations Center (SOC):JULY 2020

- Analytical Study on the Future of Cyber Security Market in Oman :JULY 2020

- Improving Fraud Detection Mechanism in Financial banking Sectors Using Data Mining Techniques: JULY 2020

- Firewalls: Enforcement of Security in Networks :February 2021

- Postdoc Ad Hoc Research Faculty of Research Center(Lincoln University College, Malaysia)2025

EXTERNAL GUIDE

1. ROOPAK S, SYSTEM CALL BASED MALWARE DETECTION IN SMART PHONES (2015-), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

2. ARYA KRISHNAN, FINGER VEIN BASED USER AUTHENTICATION(2015-), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY..

3. RAGENDU S. P., TEMPLATE PROTECTION IN BIOMETRICS AND BIO CRYPTOSYSTEMS, (2015-), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

4. GEMINI GEORGE: PREDICTION AND DETECTION OF CYBER THREATS AND ATTACKS(2015-), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

5. ANANTHAN R, CYBER ATTACK PREDICTION USING VULNERABILITY ASSESSMENT (2016-17).

6. DEVI V S, PATTERN MATCHING BASED DYNAMIC MALWARE DETECTION USING AHO-CORASICK ALGORITHM (2015- 16).

7. GIBIN GEORGE, ANDROID MALWARE DETECTION USING CLASSIFIER FUSION METHOD (2015-16).

8. SIBISH, LOW QUALITY FINGERPRINT RECOGNITION USING ENHANCEMENT, RECONSTRUCTION AND MINUTIAE MATCHING SCORE (2015-16).

9. SHIBU T V, ROBUST AND HARD-TO-INVERT HASHING OF FINGERPRINT IMAGES USING FEATURE POINTS (2015-16).

10. REVERSIBLE DATA HIDING IN ENCRYPTED IMAGES, ROSHNI (2014-15), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

11. MECHANISMS FOR ANTIPHISHING,, ROOPAK S(2013-14), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

12. FINGER VEIN BASED BIOMETRICS, ARYA (2013-14), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

13. JOINT FINGERPRINT DECRYPTION MECHANISM FOR MEDIA, SREEDEVI KOVILAKATH (2013-2014), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

14. PROXY RE-ENCRYPTION IN SYMMETRIC-KEY CRYPTOGRAPHY, HITHA (2013-14) INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

15. REMOVABLE WATERMARKING FOR IMAGES,, SHAJEELA BEEGAM (2013-14), INDIAN INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT – KERALA, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY.

PATENTS

- Indian Utility Patent for "A machine Learning Model for fraud detection in Digital Payment Systems" published on 2/1/2026 with Application no 202541132066 A and The Patent Office Journal No 01/2026

- Applied for Australian Patent for "Leveraging Explainable AI in Emergency Medical Services for Advanced and Secured Smart Ambulance communication using 5G to reduce the response times and to improve patient outcomes in Oman." Submitted on 15st May 2025

- Dr Basant Kumar, Alwaleed Saleh Ali Al Abri , Abdulbasit Khalid Al Balushi "Project X Linux", USPTO 102014-00551, Omani Patent. Submitted: 07/2023

- "Systems & Methods for Battle Field Identification using 3FA on Smart Phones", USPTO, waiting for document number. Submitted: 06/2025

- Under Review "Prototype Design of Smart Home System using Simulator " USPTO, waiting for document number. Submitted: 07/2025

RESEARCH & CONSULTANCY
- Chair, Departmental Research Committee, MCBS Muscat (2021-Present)
- Reviewer, The Research Council (TRC), Oman(2023-present)

HOSTED INTERNATIONAL RESEARCHERS

- 2019 Dr Johanna Amann, Senior Researcher, International Computer Science Institute (ICSI) and Lawrence
- Berkeley National Laboratory, Berkeley, USA
- 2018 Prof Burkhard Stiller, University of Zurich, Switzerland
- 2018 Dr Marc-Oliver Pahl, Research Director at Institut Mines Telecom (IMT) Atlantique, Rennes, France
- 2018 Benedikt Brandner, Master research student from Technical University of Munich
- 2017 Dr Continella, UCSB, then PhD student at Politecnico di Milano, Italy
- 2017 Dr Nate Evans, Assistant Professor, University of Denver
- 2017 Dr Quirin Scheitle, then PhD student at Technical University of Munich
- 2017 Dr Oliver Gasser, Researcher, Max-Planck-Institut for Computer Science
- (then PhD student at Technical University of Munich)
- 2016 Jakob Bachhuber, Master research student from Technical University of Munich
- 2015 Dario Banfi, Master research student from Technical University of Munich

INTERNATIONAL COLLABORATIONS

- Dr. Johanna Amann, International Computer Science Institute, Berkeley, CA, USA.
  Topics: Passive measurement of security protocol deployment.
- Prof. Georg Carle, Technical University of Munich, Germany.
  Topics: Internet-scale network/network security measurement.
- Dr. Diego Perino, Telefonica Research, Barcelona, Spain.
  Topics: Detection of malicious code in mobile network traffic.

EDITORIAL BOARD MEMBERS

2011-Present	External Reviewer of Oman Dental College for IT Program
2011-Present	External Project Guide of IGNOU Muscat Chapter for Master in Computer Application
2001-2007	Certificate of Appreciation for Service as a Cyber Olympiad Coordinator of Middle East Region
2015-Present	Editor in Chief, International Editorial Board of IJESR, http://www.ijmra.us/editor_ijesr.php
2015	Committee member of Inter Collegiate Career Fair(ICCF 2015), Sultanate of Oman
2015-Present	Advisory Committee Member, www.krishisanskriti.org

REVIEWVER OF JOURNALS AND CONFERENCES

1. Reviewer of Review of Control Theory and Informatics, PAK Publishing Group, http://www.pakinsight.com/
2. Reviewer of American Research Journal of Computer Science and Information Technology.
3. Reviewer of International Journal of Enhanced Research in Science Technology & Engineering (IJERSTE), ISSN No: 2319 -7463
4. Reviewer of International Journal of Enhanced Research in Management & Computer Applications (IJERMCA), ISSN No: 2319-7471
5. External Reviewer of International Journal of Management, IT and Engineering (ISSN 2249-0558)
6. External Reviewer of Scientific & Academic Publishing Co. ,Address: 1200 Rosemead Blvd, STE D #105, Rosemead, CA, 91731, USA ,E-mail: editor@sapub.org

REFERENCES

Prof. P Mani Joseph
Assistant Dean for Quality Assurance
Modern College of Business & Science

P.O. Box 100, Al-Khuwair 133, Sultanate of Oman

Ph: +968 24583566, Fax: +96824583584

drjosephmani@mcbs.edu.om

Dr Khalfan Al Ashmi

Assistant Dean for Academic Affairs
Modern College of Business & Science
P.O. Box 100, Al-Khuwair 133, Sultanate of Oman

Ph: +968 24583566
Fax: +968 24583584
E-mail: khalfan@realitycg.com
Web: www.mcbs.edu.om

Prof Rudolf Fleischer

Professor and Department Head, Dean of Engineering, GUTech (German University of Technology), Oman
+968-22061185
rudolf.fleischer@gutech.edu.om

Prof. SK Pemmaraju, PhD
Director, Post Graduate Studies
Modern College of Business & Science
Affiliated with University of Missouri, St.Louis, USA & Franklin University, Ohio, USA ,Muscat, Sultanate of Oman
Phone: +968 2458 3588 ,+968 24583583
Fax: +968 2458 3584
GSM: +968 9902 9844
pemmaraju@mcbs.edu.om

Dr Beverly Baker-Kelly
Modern College of Business & Science
(Affiliated with University of Missouri, St.Louis, USA & Franklin University, Ohio, USA)
Muscat, Sultanate of Oman
Phone: +968 2458 3588 , +968 2458 3583
bbakerkelly@gmail.com

PROFESSIONAL MEMBERSHIPS

Member (Since 2016)
Institute of Electrical and Electronic Engineers (IEEE) – USA

Associate Editor of IEEE Region 8

FMERU and FMERC Award winner and life time member of Eudoxia Research University, USA

Academic Initiative Member (Since 2014)
International Business Machines Corporation (IBM) - USA

Member (Since 2015) American Association of Science of Science & Technology (AASCIT) – USA

Founding Member (Since 2015)
Security Essential Scientific Research & Training (SESRT), Australia

Founding Member (Since 2010) C4i Center for Advanced System (CAS), King Saud University, Saudi Arabia