



Vikas Verma

iD : 0000-0003-4139-4854
Scopus ID: 58137430800
VIDWAN : 616853

Assistant Professor- Computer Sc. & Engg
vkverma@iujaipur.edu.in

Profile

Dr. Vikas Verma is an accomplished academician, researcher, and technology educator with more than **15 years of teaching and research experience** in Computer Science and Engineering. His professional expertise spans **Software Defined Networking (SDN), Machine Learning, Energy-Efficient Routing, Traffic Classification, Cybersecurity, Quantum Key Distribution (QKD), Artificial Intelligence, Internet of Things, and Data Science**. He is currently serving as an **Assistant Professor at The ICFAI University, Jaipur**, where he is actively involved in teaching, research, student development, academic coordination, and institutional initiatives.

Dr. Verma holds a **Ph.D. in Computer Science and Engineering** from JECRC University, Jaipur, with doctoral research titled **“Flow Classification and Energy Efficient Routing in Software Defined Networks Using Machine Learning Techniques.”** He also holds an **M.Tech. and B.Tech. in Computer Science and Engineering**. His academic career includes teaching positions at **The ICFAI University, Jaipur; Vivekananda Global University, Jaipur; and Jaipur National University, Jaipur**, among other institutions. At The ICFAI University, Dr. Verma undertakes several significant academic and institutional responsibilities. He currently serves as the **Internship Coordinator**, managing the Internship Program Cell and coordinating **zero-cost internship opportunities for students of B.Tech, BCA, and MCA programmes**. He is also the **SPOC for SWAYAM-NPTEL**, responsible for MOOC course planning, curriculum mapping, portal administration, and academic data management. In addition, he serves as the **SPOC/Local Coordinator for Smart India Hackathon (SIH)** and has been actively involved in organizing institutional-level SIH activities for several years.

A notable aspect of Dr. Verma's professional contribution is his extensive involvement with **national-level academic, innovation, and technology initiatives**. He has completed **15+ NPTEL certifications** and received the **“Discipline Star” distinction and Certificate of Appreciation from IIT Kanpur**. He has worked on **SWAYAM-NPTEL content augmentation** for allotted courses and established a **Remote Centre of NITTTR Chandigarh** at Jaipur National University. He also contributed to the establishment of a **Remote Centre for IIT Bombay workshops under NME-ICT (MHRD)**.

Dr. Verma has made significant contributions to **student innovation and entrepreneurship** through the Smart India Hackathon and related initiatives. He has served as **Local Coordinator and Proposal Evaluator for SIH since 2020**. As a **Team Mentor for Smart India Hackathon 2018**, his mentored team secured the **Second Runner-up position and received a ₹50,000 prize from the Department of Telecommunications, Ministry of Communications**. He has also served as a **Faculty Mentor and Evaluator for the India Innovation Challenge Design Contest (IICDC)** conducted by Texas Instruments in collaboration with the Department of Science and Technology and powered by AICTE, and as a **Technology Evaluator for Toycathon 2021**, an initiative of the Ministry of Education's Innovation Cell.

The central focus of Dr. Verma's research is **intelligent and energy-efficient networking**, particularly SDN-based architectures and machine learning-driven network optimization. He served as **Principal Investigator** for the research project **“Routing Optimization for Software-Defined Networking Using Machine Learning Techniques and Multi-Domain Controller,”** which investigated novel machine learning-based routing techniques for improving energy efficiency in software-defined networks. The project was conducted from April 2023 to March 2024 with funding from Vivekanand Global University, Jaipur. He has also contributed to an

Industry-Academia collaboration project focused on collaboration between SMEs and academics, supported by the **SIDBI Swavalamban Chair (MSME Department, Government of India)**.

His research portfolio covers **SDN, energy-efficient routing, traffic classification, machine learning, cybersecurity, quantum communication, IoT, healthcare, privacy preservation, wireless sensor networks, and intelligent systems**. His publications include research on **“Energy-Efficient Techniques in SDN: Software, Hardware, and Hybrid Approaches,” “Optimization of Routing using Traffic Classification in Software Defined Networking,”** and **“Hybrid Optimization for Integration of Renewable Energy Systems into Smart Grids.”** His work has appeared in **Scopus- and Web of Science-indexed journals**, including publications by **Elsevier and other reputed international publishers**.

His recent research extends toward the convergence of **Quantum Key Distribution, cybersecurity, and Software Defined Networking**. He is currently working on **“EE-QSDN: An Energy-Efficient Trusted-Relay Routing Framework for QKD-Secured Software-Defined Networks,”** which investigates energy-efficient routing in SDN integrated with QKD through a trusted-relay architecture. The manuscript has been submitted to *Energy Efficiency* (Springer Nature) and is currently under review. He has also contributed research on the **comparative analysis of Quantum Key Distribution protocols**, examining their security, efficiency, and practicality.

Dr. Verma's interdisciplinary research contributions include **AI and Machine Learning applications in healthcare, IoT, privacy preservation, cloud computing, wireless sensor networks, sentiment analysis, and robotics**. His publications and conference contributions include research on **IoT-assisted smart farming using Data Science, Machine Learning for Privacy Preservation, Energy-Efficient Protocols for Wireless Sensor Networks, Mobile Robot Navigation, Sentiment Analysis, and Machine Learning applications in SDN**. He has also contributed to contemporary AI research through the paper **“Comparative Perspective on Prompt Optimization for Large Language Models: A Comprehensive Survey,”** presented at BIDA 2026 and planned for publication in a Scopus-indexed Springer series.

His research and innovation activities have also resulted in **two UK design patents**. These include **“Medical Device for Rapid Detection of Cancer Biomarkers in Saliva” (Design No. 6468388, September 2025)** and **“AI-Based Finance Management Computer for Proactive Risk Mitigation” (Design No. 6471217, October 2025)**. These intellectual-property contributions demonstrate his interest in translating research and emerging technologies into innovative solutions.

Beyond teaching and research, Dr. Verma is actively engaged in **academic administration, curriculum development, professional reviewing, and faculty development**. He has participated in **Board of Studies activities for curriculum design aligned with NEP 2020** and has served as a **reviewer for Scopus-indexed international journals since 2024**. His professional development includes programmes and workshops in **Big Data Analytics, Data Science using R, Ethical Hacking and Cyber Forensics, Python, IoT, Android Application Development, Artificial Intelligence, and Research Methodology**. He has also contributed to conducting faculty development and short-term training programmes.

Dr. Verma has received several recognitions for his academic and professional contributions, including a **Certificate of Appreciation from the Confederation of Elite Academicians of IICDC–AICTE & MyGov** and recognition for outstanding contribution as a **SWAYAM-NPTEL Local Chapter/NPTEL Brand Ambassador**. He is also a **Lifetime Member of the International Association of Engineers (IAENG)**. His continued involvement in student projects, innovation programmes, internships, national-level initiatives, research reviewing, and academic coordination reflects his commitment to strengthening **technology-driven education, research, innovation, and student employability**.

With a strong combination of **15+ years of teaching experience, doctoral research, funded projects, scholarly publications, patents, national-level academic initiatives, and expertise in emerging technologies**, Dr. Vikas Verma continues to contribute to the advancement of Computer Science and Engineering education and research. His research interests particularly focus on **Software Defined Networking, Machine Learning, Energy-Efficient Routing, Traffic Classification, Cybersecurity, Quantum-Secured Networks, Artificial Intelligence, and next-generation intelligent communication systems**.