Title: Blockchain and AI for transforming Healthcare Through Secure Data Management and Enhanced Patient Care

Abstract: With the digitization of healthcare records and the proliferation of electronic health information, concerns regarding data security and privacy have become paramount. Healthcare data breaches, whether due to cyberattacks or internal vulnerabilities, pose significant risks to patient confidentiality and can result in identity theft, financial fraud, and compromised medical information. Addressing these challenges requires innovative solutions that prioritize secure and interoperable data exchange while safeguarding patient privacy and confidentiality. Blockchain and Artificial Intelligence (AI) play pivotal roles in overcoming these challenges. Blockchain ensures secure and transparent data exchange by utilizing decentralized ledgers and cryptographic techniques. Meanwhile, AI-driven predictive analytics and clinical decision support systems leverage vast healthcare data for optimized treatment strategies and patient engagement. For example, blockchain-based medical records platforms enable secure patient data access, while AI-powered supply chain management enhances drug traceability and inventory optimization. As these technologies continue to evolve and mature, their impact on healthcare will become increasingly profound, shaping the future of medicine and patient care. Patients can have greater control over their healthcare data and access to personalized insights and treatment options. Finally, streamlined communication and interoperable data systems can reduce administrative burdens, minimize errors, and optimize resource utilization.

Biography

Debashis Das is currently working as a post-doctoral fellow in the Department of Computer Science and Data Science at Meharry Medical College, TN, USA. He is former Assistant Professor in the Department of Computer Science and Engineering at Narula Institute of Technology, WB, India. He received his Ph.D. from the University of Kalyani, India, in 2023 and completed his M. Tech and B. Tech in Computer Science and Engineering from MAKAUT in 2018 and 2015, respectively. He is a member of IEEE. Dr. Das has more than 30+ publications in various peer-reviewed reputed journals and conferences. He is a permanent reviewer of IEEE Journal of Biomedical and Health Informatics and Future Generation Computer Systems, Elsevier. He also served as reviewer for IEEE TVT, IoTJ, TITS, PPNA, and Journal of Supercomputing. His research interests include Cybersecurity, Intelligent Transportation Systems (ITS), Blockchain Technology, and Artificial Intelligence (ML, FL). He has performed as invited TPC member or Chair for so many international conferences, like CICBA, BCCA, CCGRID, ICDCN, IEEE STP-CPS, ICSPIS, ISORC, IoST etc.