


Chapter 14


Transformative AIoT Applications in Medicine: Real-World Case Studies

Lakshmi Haritha Medida

 <https://orcid.org/0000-0002-6400-8998>

R.M.K. Engineering College, India

G. L. N. V. S. Kumar

 <https://orcid.org/0009-0001-4756-2241>

B.V.C. Institute of Technology and Science, India

M. Prasad

 <https://orcid.org/0000-0002-5092-9032>

Shri Vishnu Engineering College for Women, India

ABSTRACT

Through real-world case studies, this chapter explores the revolutionary impact caused by AIoT (artificial intelligence of things) in healthcare and demonstrates how AIoT technologies are transforming medical services. Important instances include GE Healthcare's APM, which used maintenance data from more than 50 hospitals to minimize equipment downtime by 25%, and Philips HealthSuite, which used remote patient monitoring to cut hospital readmissions by 30%. Ping An Smart Healthcare's use of AIoT in its analysis of over 10 million patient data resulted in a 15% increase in diagnosis accuracy. The chapter also covers innovations in tele-medicine with Teladoc Health, customized medicine with IBM Watson for oncology, AI-driven diagnostics with Zebra Medical Vision, and medication management with Medtronic's MiniMed 670G. Every case study demonstrates notable, data-driven advances in operational and patient care, operational efficiency, and precision, highlighting the potential of AIoT to transform healthcare outcomes.

DOI: 10.4018/979-8-3693-7703-1.ch014

1. INTRODUCTION

A new age of innovation known as the Artificial Intelligence of Things (AIoT) has been brought about by the combination of Artificial Intelligence (AI) with the Internet of Things (IoT). When combined, these two advantages provide intelligent systems the ability to recognize, analyze, and adapt to the enormous volumes of data produced by multiple organizations, including the healthcare sector. It does this by combining the data-gathering capabilities of IoT devices with the analytical capability of AI algorithms.

AIoT is a medical technology that has the potential to revolutionize conventional medical treatments. AIoT solutions are revolutionizing patient care, diagnostics, and healthcare delivery by fusing AI and IoT technology. The aforementioned breakthroughs furnish healthcare professionals with up-to-date data insights for personalized treatment plans, proactive patient monitoring, and predictive analytics. These developments ultimately enhance clinical results and operational effectiveness.

2. THE EMERGENCE OF AIOT

Figure 1 illustrates how two powerful technologies are combined to create AIoT. AI empowers robots to do activities like learning, reasoning, and problem-solving that often require human intellect. The IoT connects everyday devices to the internet so they can transmit and receive data (Russell & Norvig, 2020). These technologies, when combined, provide a solid basis for building systems that are capable of performing complex tasks independently. This makes them very helpful in fields like medicine where precision and data are crucial.

38 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/transformational-aiot-applications-in-medicine/368934

Related Content

Sustainable Minds, Intelligent Machines: The Future of Business Education

Pankaj Bhambri (2026). *Empowering Sustainable Business Education and Training Through AI* (pp. 295-322).

www.irma-international.org/chapter/sustainable-minds-intelligent-machines/406363

Integrated Network Topological Control and Key Management for Securing Wireless Sensor Networks

S. Kumar and N. Nagarajan (2013). *International Journal of Ambient Computing and Intelligence* (pp. 12-24).

www.irma-international.org/article/integrated-network-topological-control-and-key-management-for-securing-wireless-sensor-networks/104158

The Core Aspects of Search Engine Optimisation Necessary to Move up the Ranking

Stephen O'Neill and Kevin Curran (2011). *International Journal of Ambient Computing and Intelligence* (pp. 62-70).

www.irma-international.org/article/core-aspects-search-engine-optimisation/61140

Exploring the Advances of Artificial Intelligence in Cryptocurrencies and Darknet Forensics

Ramy El-Kady (2027). *Encyclopedia of Modern Artificial Intelligence* (pp. 1-35).

www.irma-international.org/chapter/exploring-the-advances-of-artificial-intelligence-in-cryptocurrencies-and-darknet-forensics/406039

Virtual Experiences, Real Consequences: How Virtual Reality Transforms Consumer Behavior in E-Commerce

Anil Kumar Kashyap and Ity Sahu (2023). *AI and Emotional Intelligence for Modern Business Management* (pp. 254-262).

www.irma-international.org/chapter/virtual-experiences-real-consequences/332641