

Chapter 12

Incorporation of Computer Vision and Metaverse Analysis Using UAV Communications for Healthcare Applications

Mukunth Madavan

SASTRA University, India

Akshay Kumar R.

TL Consulting Group, Australia

Akshay Bhuvaneswari Ramakrishnan

 <https://orcid.org/0009-0000-1578-0984>


SASTRA University, India

Manikandan R.

 <https://orcid.org/0000-0001-6116-2132>

SASTRA University, India

S. Magesh

 <https://orcid.org/0000-0003-2876-7337>

Dr. M.G.R. Educational and Research Institute, India

ABSTRACT

The integration of computer vision, unmanned aerial vehicles (UAVs), and metaverse analysis has potential to transform healthcare and offers solutions to geographical challenges. Emphasizing real-world applications, it details how computer vision aids

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in real-time patient monitoring and disease detection, while the metaverse enables immersive medical simulations and remote patient monitoring. Unmanned aerial vehicles help break the geographical barriers and give people access to healthcare services. The synergy between computer vision and metaverse analysis facilitates revolutionary data analysis and has multiple applications. Augmented reality (AR) and virtual reality (VR) tools enhance user engagement, enabling remote patient monitoring and medical simulations. The integration of metaverse analysis with UAVs introduces applications such as remote operation, telemedicine, propelling healthcare into a new era.

INTRODUCTION

The healthcare industry is constantly evolving with engineers and doctors working together to leverage the power of advanced technologies to solve the complex problems in healthcare. In recent years, the focus on this combination has led to several innovations in the healthcare industry, transforming traditional practices into efficient and scalable modern solutions. The fusion of multiple technologies allows us to construct systems that have fewer disadvantages since the fusion masks the negative impact of each technology individually.

In recent years, the field of Artificial Intelligence(AI) has been revolutionizing medical research (Alowais S.A et al.,2023), providing a more efficient way to extract knowledge from large amounts of data and analyse it quickly. There are different types of machine learning algorithms which can be implemented based on the type of data used in the problem. Similarly, there are different subfields of Artificial intelligence like Natural Language Processing(NLP), Cognitive computing, Computer Vision, Deep learning and Machine Learning which provide a wide variety of options for us to tackle even the most complex of the problems (Priyadarshini, S. B. B., et al., 2020).

These state of art technologies which are constantly evolving can be used to fuel medical research, which leads to better healthcare services being provided for the patients. Most of the research in the medical field is patient centric which involves developing drugs that are more efficient in curing the disease and cost effective as it makes the drug accessible to everybody (Maizes, V et al., 2009). On the other side, there is an aspect of healthcare which involves making the medical services available even in remote areas. There is also a need for emergency medical services in inaccessible locations where transport to these areas is either time consuming or not feasible.

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