## The metaverse applications for the finance industry, its challenges, and an approach metaverse finance industry

Md Ariful Islam Mozumder\*, Tagne Poupi Theodore A.\*, Ali Athar\*, Hee-Cheol Kim\*

\*Department of Computer Engineering/Institute of Digital Anti-Aging Healthcare/u-HARC, Inje University, South Korea

arifulislamro@gmail.com, poupiarmand2@gmail.com, ali.athar14@ce.ceme.edu.pk, heeki@inje.ac.kr

*Abstract*— With the rapid development of digital technology, all areas of society may accelerate their entry into the virtual world, thus blurring the boundary between the physical and digital worlds and promoting a Metaverse. The more financial opportunities Metaverse offers its members, the more choices they have. Whether you're a visitor or a company that has invested in the Metaverse to sell your goods, there are many ways to generate money. The potential of the Metaverse to build virtual spaces for people to connect may have a significant negative impact on the financial and banking sector, among other useful applications it offers. Virtual reality (VR) and augmented reality, among other cutting-edge technology, can be interacted with by users in novel ways thanks to the metaverse (AR). These developing ideas have given rise to the Metaverse, a virtual economy where things may be produced and purchased. Metaverse increased the financial trust-ability of the people for its reliable and safe technologies. Metaverse uses digital virtual identifications, extended reality, blockchain decentralization techniques, AI applications, IoT systems, and digital twins for metaverse finances. In this paper, we are going to explain metaverse applications, their challenges, and a conceptual approach for the finance industry.

Keyword-Metaverse, finance, banking, artificial intelligence, blockchain, digital twins



**Md Ariful Islam Mozumder** was born in Bangladesh 1992, received his BSc in Computer Science & Engineering from the World University of Bangladesh, and an MS degree in Artificial Intelligence from the Inje University South Korea in 2022. Currently, he is pursuing his Ph.D. in the Institute of Digital Anti-Aging Healthcare from Inje University. He has previously worked on multiple reallife projects related to computer vision and data sciences. His research interest aligns with Computer Vision, Artificial Intelligence, Metaverse, Signal Processing, Algorithms, Blockchain, and Medical Image Processing.



Ali Athar is a Ph.D. student at the Institute of Digital Anti-aging and healthcare at Inje University. His research interest's area Machine Learning, Deep Learning, includes Image Processing, Metaverse, and Natural Language Processing.



Tagne Poupi Theodore A. is a Ph.D. student at the Institute of Digital Anti-aging and healthcare at Inje University. His research interest's area includes Computer Vision, Metaverse, Image Processing, Deep Learning, and Machine Learning.



Hee-Cheol Kim BSc at the Department of Mathematics, MSc at the Department of Computer Science in SoGang University in Korea, and Ph.D. at Numerical Analysis and Computing Science, Stockholm University in Sweden. He is a professor and Head of the Department of the Institute. Digital Anti-aging Healthcare, Inje University, S: Korea. His research interests include Machine learning, Text mining, Bio Informatics.