

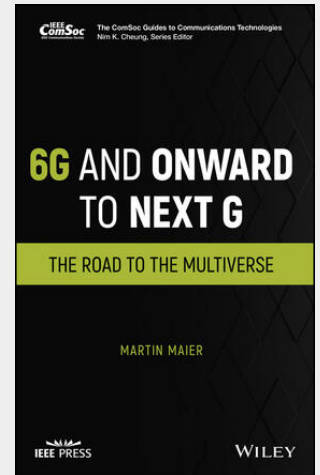
Maier

6G and Onward to Next G

The Road to the Multiverse

This book weaves emerging themes in future 6G and Next G networks carefully together. It points to three spheres of contexts with different narratives for the year 2030 and beyond, in which the coming Metaverse as the precursor of the future Multiverse can be embedded naturally. The book aims at providing the reader with new cross-disciplinary research material, ranging from communication and computer science to cognitive science, social sciences, and behavioral economics, for building a deeper Metaverse. It will be instrumental in helping the reader find and overcome some of the most common 6G and Next G blind spots. Modern networks are more than communication and computer science. They may be better viewed as techno-social systems that exhibit complex adaptive system behavior and resemble biological superorganisms. 6G and especially Next G should go beyond continuing the linear incremental 6G=5G+1G mindset of past generations of mobile networks. To this end, the book: * Helps readers inquire into new areas of knowledge or understanding that they didn't have or didn't pay attention to find their 6G/Next G blind spots * Highlights the unique potential benefits of the virtual world for society in that it provides a useful extension of the real-world economy by compensating for its well-known market failures, e.g., rising income inequality * Provides a comprehensive description of the original Metaverse vision and highlights the different Metaverse components, applications, open research challenges, and early Metaverse deployment examples from both industry and academia * Describes how the Multiverse goes beyond the Metaverse origins and explores the importance of experience innovation since experiences play a central role in the Metaverse * Explains Web3 and the emerging field of token engineering and tokenization, i.e., the process of creating tokenized digital twins via programmable tokens, which are viewed as the killer application of Web3 networks for creating technology-enabled social organisms and restoring tech-driven common goods * Reviews anticipated 6G paradigm shifts and elaborates on the difference between 6G and Next G research, including Next G Alliance's audacious goals and their symbiotic relationship between technology and a population's societal and economic needs * Doubles down on the mutually beneficial symbiosis between digitalization and biologization for our possible evolution into future metahumans with infinite capabilities by making us smarter and creating a fundamentally new form of sociality in the Metaverse and Multiverse as well as the future stigmergy enhanced Society 5.0 by leveraging on time-tested self-organization mechanisms borrowed from nature * Presents a variety of different concepts of the true nature of reality that bring us closer to the original Metaverse vision and explains how 6G, Next G, and the Metaverse may eventually pave the way to the peak-experience machine that democratizes access to the upper range of human experiences * Touches on the possible transition from communication to services beyond communication, most notably the cross-cultural phenomenon of *communitas* in anthropology and its increasing degrees of perceived connectedness with others, the world, and oneself, given the importance of creating a deep sense of community in the Metaverse

Written for students, network researchers, professionals, engineers, and practitioners, 6G and Onward to Next G: The Road to the Multiverse explores the latest Internet developments, with a particular focus on 6G and Next G networks in the context of the emerging Metaverse and future Multiverse as the successors of today's mobile Internet that has defined the last two decades.



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