Chang Wen Chen, Zhu Li, and Shiguo Lian (Eds.)

Intelligent Multimedia Communication: Techniques and Applications

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Preface

Multimedia data are used more and more widely in human being's life, e.g., videoconferencing, visual telephone, IPTV, etc. Nearly most of the applications need multimedia transmission techniques that send multimedia data from one side to another side and keep the properties of efficiency, robustness and security. Here, the efficiency denotes the time cost of transmission operations, the robustness denotes the ability to survive transmission errors or noises, and the security denotes the protection of the transmitted media content. Recently, various intelligent or innovative techniques are invented, which bring vast performance improvements to practical applications. For example, such content transmission techniques as p2p, sensor network and ad hoc network are constructed, which adaptively use the peers' properties to improve the network's resources. Multimedia adaptation techniques can adjust the multimedia data rate in order to compliant with the network's bandwidth. Scalable encryption techniques can generate the data stream that can be correctly decrypted after bit rate conversion. Ubiquitous multimedia services make the user share any kind of content anywhere.

To the best of our knowledge, few books focus on intelligent or innovative multimedia transmission techniques. To access the latest research related to intelligent multimedia transmission, we launched the book project where researchers from all over the world provide the necessary coverage of the mentioned field. The primary objective of this project was to assemble as much research coverage as possible related to the field by defining the latest innovative technologies and providing the most comprehensive list of research references.

The book includes sixteen chapters highlighting current concepts, issues and emerging technologies. Distinguished scholars from many prominent research institutions around the world contribute to the book. The book covers various aspects, including not only some fundamental knowledge and the latest key techniques, but also typical applications and open issues. For example, the covered topics include the present and future video coding standards, stereo and multiview coding techniques, free-viewpoint TV techniques, wireless broadcasting techniques, media streaming techniques, wireless media transmission techniques and systems, and User-Generated Content sharing.

The diverse and comprehensive coverage of multiple disciplines in the field of intelligent multimedia transmission will contribute to a better understanding of all topics, research, and discoveries in this emerging and evolving field. Furthermore, the contributions included in this book will be instrumental in the expansion of the body of knowledge in this field. The coverage of this book provides strength to this

reference resource for both researchers and also decision makers in obtaining a greater understanding of the concepts, issues, problems, trends, challenges and opportunities related to this field of study. It is our sincere hope that this publication and its great amount of information and research will assist our research colleagues, all faculties, their students, and our organizational decision makers in enhancing their understanding of this research field. Perhaps this publication will even inspire its readers to contribute to the current discoveries in this immense field.

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