Preface

This book compiles a series of interesting and timely papers in the areas (1) ad hoc networks, (2) multimedia and streaming, (3) mobile Technologies, and (4) privacy.

In the first section, the first paper (*Security Management for Mobile Ad Hoc Network of Networks (MANoN)*) uses interval temporal logic to improve security management with a focus on ad hoc networks. Vehicular ad hoc networks (*A Probabilistic Routing Protocol in VANET*) are a special case since the topology of the network changes all the time; routing is thus a challenge. Secure communication between clients in ad hoc networks (*An Inter-Domain Agent Based Secure Authorization and Communication for Mobile Clients in Wireless AdHoc Networks*) requires authentication of nodes and keeping the overhead of communication and computation low. When multiple nodes communicate congestion on the shared communication channel may occur. Concurrent transmission on the MAC layer (*Improving Throughput of Starved TCP Flow by Sidestepping Bottleneck Nodes Using Concurrent Transmission*) can improve this. Dynamically deploying and reconfiguring software components is useful in ad hoc networks in the face of node mobility, dynamic environmental conditions and changing application requirements. LooCI (*Building Wireless Sensor Network Applications with LooCI*) is model that is optimized for such constrained environments such as ad hoc networks or sensor networks.

The second section covers a wide range of topics in the area of multimedia and streaming. WiMAx video delivery (*Options for WiMAX Uplink Media Streaming*) may be improved by using H.264/AVC to avoid oscillations in buffer load. Moreover, channel estimation algorithms (*On Uplink Channel Estimation in WiMAX Systems*) are compared for uplink WiMAX systems and improvements are being proposed. Communication channel properties certainly influence how the quality of streaming content is perceived, but in addition to objective figures, a subjective rating of the quality of experience (*Quality of Experience models for Multimedia Streaming*) helps to improve prediction models and optimize the usage of communication infrastructure. With small devices becoming ubiquitous, the transition from IPv4 to IPv6 accelerates and several problems need to be addressed (*Utilization of an Improvement Manuel Configuration for Multimedia in 6 to 4 Tunneling*). Low quality video can be improved by denoising; information from the spatial domain can help to improve this task (*A Proposed Intelligent Denoising Technique for Spatial Video Denoising for Real-Time Applications*). When recording a talk, the location of the speaker can be determined by the two microphones (*Automatic Speaker Localization and Tracking Using a Fusion of the Filtered Correlation with the Energy Differential*); this information can be used to decide who the active speaker is and audio-visual recording can then be optimized for the location.

Section 3 covers mobile technologies. The first chapter in this section focuses on route optimization (*Extended Mobile IPv6 Route Optimization for Mobile Networks in Local and Global Mobility Domain*) since tunnelling the communication from the home network to the mobile device in another network increases delays. A comprehensive literature survey (*Network Layer Mobility Management*

Schemes for IP-Based Mobile Networks: A Survey) is useful for other researchers to build on. On the application level, mobile devices are increasingly diverse in the features they support. Thus a tool box (*A CASE Tool for Java Mobile Computing Applications*) to create portable apps can help to fight the cost of increased diversity.

The last section addresses privacy such as speaker identification (*Pertinent Prosodic Features for Speaker Identification by Voice*) or location privacy. Location privacy can be improved by using a trusted middleware (*Memorizing Algorithm: Protecting User Privacy using Historical Information of Location–Based Services*) that organizes space in an adaptive grid and hides the user's true location. Mobile advertising needs to use specific mechanisms to target the receivers of advertisements (*Building an Intelligent Mobile Advertising System*) and this has an impact on an individual's privacy.

Ismail Khalil
Johannes Kepler University Linz, Austria

Edgar Weippl
Secure Business Austria-Security Research, Austria