

Contents

Foreword	v
Contents	vii
Contributing Authors	xi
Introduction	xv
Chapter 1	
Experiments on Decision Fusion for Driver Recognition	1
Hakan Erdoğan, Aytül Erçil and Hüseyin Abut	
Chapter 2	
Driver Recognition System Using FNN and Statistical Methods	11
Abdul Wahab, Tan Chin Keong, Hüseyin Abut and Kazuya Takeda	
Chapter 3	
Driver Identification Based on Spectral Analysis of Driving Behavioral Signals	25
Yoshihiro Nishiwaki, Koji Ozawa, Toshihiro Wakita, Chiyomi Miyajima, Katsunobu Itou, and Kazuya Takeda	
Chapter 4	
An Artificial-Vision Based Environment Perception System	35
S. Nogueira, Y. Ruichek, F. Gechter, A. Koukam, and F. Charpillat	

Chapter 5	
Variable Time-Scale Multimedia Streaming Over 802.11 Inter-Vehicle Ad-hoc Networks	47
Antonio Servetti, Enrico Masala, Paolo Buccioli, and Juan Carlos De Martin	
Chapter 6	
A Configurable Distributed Speech Recognition System	59
Haitian Xu, Zheng-Hua Tan, Paul Dalsgaard, Ralf Mattethat, and Børge Lindberg	
Chapter 7	
Embedded Mobile Phone Digit-Recognition	71
Christophe Lévy, Georges Linarès, Pascal Nocera, and Jean-François Bonastre	
Chapter 8	
On The Complexity-Performance Tradeoff of Two Active Noise Control Systems for Vehicles	85
Pedro Ramos, Luis Vicente, Roberto Torrubia, Ana López, Ana Salinas, and Enrique Masgrau	
Chapter 9	
Comparative Studies on Single-Channel De-Noising Schemes for In-car Speech Enhancement	97
Weifeng Li, Katunobu Itou, Kazuya Takeda, and Fumitada Itakura	
Chapter 10	
Advances in Acoustic Noise Tracking for Robust In-vehicle Speech Systems	109
Murat Akbacak and John H.L. Hansen	
Chapter 11	
Speaker Source Localization Using Audio-Visual Data and Array Processing Based Speech Enhancement for In-vehicle Environments	123
Xianxian Zhang, John H.L. Hansen, Kazuya Takeda, Toshiki Maeno, Kathryn Arehart	

Chapter 12	
Estimation of Active Speaker's Direction Using Particle Filters for In-vehicle Environment	141
Mitsunori Mizumachi and Katsuyuki Niyada	
Chapter 13	
Noise Reduction Based on Microphone Array and Post-Filtering for Robust Speech Recognition in Car Environments	153
Junfeng Li and Masato Akagi	
Chapter 14	
ICA-Based Technique in Air and Bone-Conductive Microphones for Speech Enhancement	167
Zhipeng Zhang, Kei Kikuri, Nobuhiko Naka, and Tomoyuki Ohya	
Chapter 15	
Acoustic Echo Reduction in a Two-Channel Speech Reinforcement System for Vehicles	177
Alfonso Ortega, Eduardo Lleida, Enrique Masgrau, Luis Buera, and Antonio Miguel	
Chapter 16	
Noise Source Contribution of Accelerating Cars and Subjective Evaluations	189
Shunsuke Ishimitsu	
Chapter 17	
Study on Effect of Speaker Variability and Driving Conditions on the Performance of an ASR Engine Inside a Vehicle	201
Shubha Kadambe	
Chapter 18	
Towards Robust Spoken Dialogue Systems Using Large-Scale In-car Speech Corpus	211
Yukiko Yamaguchi, Keita Hayashi, Takahiro Ono, Shingo Kato, Yuki Irie, Tomohiro Ohno, Hiroya Murao, Shigeki Matsubara, Nobuo Kawaguchi, Kazuya Takeda	

Chapter 19	
Exploitation of Context Information for Natural Speech Dialogue Management in Car Environments	223
Markus Abläßmeier and Gerhard Rigoll	
Chapter 20	
Cross Platform Solution of Communication and Voice / Graphical User Interface for Mobile Devices in Vehicles	237
Géza Németh, Géza Kiss, Bálint Tóth	
Chapter 21	
A Study of Dialogue Management Principles Corresponding to The Driver's Workload	251
Makoto Shioya, Takuya Nishimoto, Juhei Takahashi, and Hideharu Daigo	
Chapter 22	
Robust Multimodal Dialog Management for Mobile Environments	265
Jeonwoo Ko, Fumihiko Murase, Teruko Mitamura, Eric Nyberg, Nobuo Hataoka, Hirohiko Sagawa, Yasunari Obuchi, Masahiko Tateishi, and Ichiro Akahori	
Index	279