Preface

Program Committee

Reviewers

SENSORCOMM 1: ENOPT

Energy-Efficient Tree Routing Algorithm-Based Destination Family Group in ZigBee Networks

Saeyoung Ahn, Doohyun Ko, Bumjin Kim, Sangbin Lee, and Sunshin An

A Cooperative Power-Saving Technique Using DVS and DMS Based on Load Prediction in Sensor Networks

Takahiro Hamachiyo, Yusuke Yokota, and Eiji Okubo

Optimal Energy-Based Clustering with GPS-Enabled Sensor Nodes

Kowsar Ali, Sarmistha Neogy, and Pradip Kumar Das

Balancing Energy Loads in Wireless Sensor Networks through Uniformly Quantized Energy Levels-Based Clustering

Syed Amjad Ali, Cüneyt Sevgi, and Altan Kocyigit

SENSORCOMM 2: RIWISN

COLA: Complexity-Reduced Trilateration Approach for 3D Localization in Wireless Sensor Networks

Chia-Yen Shih and Pedro José Marrón

Latency and Packet Loss of an Interferred 802.15.4 Channel in an Industrial Environment

Jerkel Delsing, Jens Eliasson, and Viktor Leijon

Shintaro Izumi, Koh Tsuruda, Takashi Takeuchi, Hyeokjong Lee, Hiroshi Kawaguchi, and Masahiko Yoshimoto

Modeling of the RSS Uncertainty for RSS-Based Outdoor Localization and Tracking Applications in Wireless Sensor Networks

Tsenka Stoyanova, Fotis Kerasiotis, Konstantinos Efstathiou, and George Papadopoulos

 SENSORCOMM 3: SECSED I

Characteristics of Three Miniature Bio-inspired Optic Flow Sensors in Natural Environments

Stéphane Viollet, Franck Ruffier, Thomas Ray, Mohsine Menouni, Fabrice Aubépart, Lubin Kerhuel, and Nicolas Franceschini

Modular Sensor Sets for Stationary or On-robot Use in Proteus System

Grzegorz Kowalski

Stacked Photo-Sensing Devices Based on SiC Alloys: A Non-pixelled Architecture for Imagers and Demultiplexing Devices

M. Vieira, P. Louro, M. Fernandes, A. Fantoni, M. A. Vieira, and J. Costa

Autonomous Wireless Sensor Node for Building Climate Conditioning Application

Hynek Raisigel, Gilles Chabanis, Isabelle Ressejac, and Michel Trouillon

 SENSORCOMM 4: SECSED II

WSN Middleware for Existing Smart Homes

Harri Pensas and Jukka Vanhala

CMOS Implementation of POSFET Tactile Sensing Arrays with on Chip Readout

Ravinder S. Dahiya, Andrea Adami, Maurizio Valle, Leandro Lorenzelli, and Giorgio Metta

Integrated Circuit Architectures for High-Speed Time-Resolved Imaging

Martin Zlatanski, Wilfried Uhring, Jean-Pierre Le Normand, Chantal-Virginie Zint, and Daniel Mathiot

A Teleoperated Minimally Invasive Surgical System with an Additional Degree of Freedom Manipulator

Ki-Young Kim, Ho-Seok Song, Jung-Wook Suh, and Jung-Ju Lee

 SENSORCOMM 5: DAIPSN

Derivation of Non-intrusive Cardiac Synthetic Sensor Using Native Instrumentation Metadata

Paul J. Fortier
Using Data Compression for Delay Constrained Applications in Wireless Sensor Networks .................................................................101
M. Eugène Pamba Capo-Chichi, Jean-Michel Friedt, and Hervé Guyennet
Advanced Bio-inspired Plausibility Checking in a Wireless Sensor Network
Amir Jabbari and Walter Lang
Optimized Data Aggregation in WSNs Using Adaptive ARMA .................................................................115
Jialiang Lu, Fabrice Valois, Mischa Dohler, and Min-You Wu

SENSORCOMM 6: SAPSN I
A Middleware for Heterogeneous and Logical Sensor Networks .................................................................121
Kisung Lee, Jun Wook Lee, and Jae Gak Hwang
Hybrid Position-Detection Algorithms for Sensor Nodes Using Received Signal Strength Indication and Control Transmission .................................................................127
Saeyoung Ahn, Sungjun Kim, Jaekeun Yoon, Kyengheum Na, and Sunshin An
Run-Time Compilation of Bytecode in Sensor Networks .................................................................133
Joshua Ellul and Kirk Martinez
Automatic Application Object Migration in Sensor Networks .................................................................139
Paul Hunkin and Tony McGregor

SENSORCOMM 7: SAPSN II
Secure Sensor Networks for Critical Infrastructure Protection .................................................................144
Laurent Gomez and Cedric Ulmer
Jun-Zhao Sun
Low-Traffic and Low-Power Data-Intensive Sound Acquisition with Perfect Aggregation Specialized for Microphone Array Networks .................................................................157
Hiroki Noguchi, Tomoya Takagi, Koji Kugata, Masahiko Yoshimoto, and Hiroshi Kawaguchi
Extension of RFID Middleware Platform for Handling Active Sensor Tags .................................................................163
Hyunwoo Kim, Wooseok Ryu, and Bonghee Hong

SENSORCOMM 8: DISN I
Autonomy Suitability of Wireless Modules for Ambient Assisted Living Applications: WiFi, Zigbee, and Proprietary Devices .................................................................169
Celso P. Figueiredo, Óscar S. Gama, Carlos M. Pereira, Paulo M. Mendes, Sérgio Silva, Leonel Domingues, and K.-P. Hoffmann
A Distributed Sensor Network for Real-Time Acoustic Traffic Monitoring and Early Queue Detection .................................................................173
B. Barbagli, I. Magrini, G. Manes, A. Manes, G. Langer, and M. Bacchi
Wireless Patient Monitoring System .................................................................179
  
  Radosveta Sokullu, Mustafa Alper Akkaç, and Hüseyin Ertürk Çetin

An Embedded Wireless Sensor Network System for Cultural Heritage Monitoring .................................................................185
  
  Luca Bencini, Giovanni Collodi, Davide Di Palma, Gianfranco Manes,
  and Antonio Manes

SENSORCOMM 9: DISN II

Hybrid Sensor Module and Data Processing Using Low-Power Wakeup in WSN .................................................................191
  
  Sang Gi Hong, Nae Soo Kim, Cheol Sig Pyo, and Whan Woo Kim

Reliability and Latency Enhancements in a ZigBee Remote Sensing System .................................................................196
  
  Jingcheng Zhang, Allan Huynh, Qinzhong Ye, and Shaofang Gong

Ambient Intelligence in Intermodal Transport Services: A Practical Implementation in Road Logistics .................................................................203
  
  Verónica Gutiérrez, Miguel Izaguirre, Jesús Pérez, Luis Muñoz, David López,
  and Marcos Sánchez

Reliability and Field Aging Time Using Temperature Sensors .............................................................................................................210
  
  Massimo Civilini

SENSORCOMM 10: APASN I

TrickleTree: A Gossiping Approach to Fast Staggered Scheduling for Data Gathering Wireless Sensor Networks .................................................................214
  
  Wojciech Bober, Xiaoyun Li, and Chris Bleakley

ERTA: Energy Efficient Real Time Target Tracking Approach for Wireless Sensor Networks .................................................................220
  
  Supreet Kaur Sarna and Mukesh Zaveri

Experimental Evaluation of Beacon Scheduling Mechanisms for Multihop IEEE 802.15.4 Wireless Sensor Networks .................................................................226
  
  Berta Carballido Villaverde, Rodolfo De Paz Alberola, Susan Rea, and Dirk Pesch

An Energy Efficient Cross Layer Solution Based on Smart Antennas for Wireless Sensor Network Applications .................................................................232
  
  Luca Bencini, Giovanni Collodi, Davide Di Palma, Gianfranco Manes,
  and Antonio Manes

SENSORCOMM 11: APASN II

An Experimental Study of RSS-Based Indoor Localization Using Nonparametric Belief Propagation Based on Spanning Trees .................................................................238
  
  Vladimir Savic, Adrián Población, Santiago Zazo, and Mariano García

ER-MAC: A Hybrid MAC Protocol for Emergency Response Wireless Sensor Networks .................................................................244
  
  Lanny Sitanayah, Cormac J. Sreenan, and Kenneth N. Brown
On the Performance of a Hierarchical Clustering Based-Geocast Algorithm in Wireless Sensor Networks with Guaranteed Delivery ................................................................. 250
  Jean Frédéric Myoupop and Aboubecrine Ould Cheikhna

Low Power Wake-Up in Wireless Sensor Networks Using Free Space Optical Communications ........................................................................................................... 256
  James Mathews, Matthew Barnes, Alex Young, and D. K. Arvind

SENSORCOMM 12: APASN III

MR-LEACH: Multi-hop Routing with Low Energy Adaptive Clustering Hierarchy ................................................................. 262
  Muhammad Omer Farooq, Abdul Basit Dogar, and Ghalib Asadullah Shah

Efficient Query Processing on Bulk Data of Sensor and Location ........................................................................................................................... 269
  Kwangjae Lee, Sungwoo Ahn, Bonghee Hong, and Kyeongju Kim

Energy-Efficient Multiple Targets Tracking Using Target Kinematics in Wireless Sensor Networks .................................................................................................. 275
  Akond Ashfaqe Ur Rahman, Mahmuda Naznin, and Md. Atiqul Islam Mollah

Smart City: An Event Driven Architecture for Monitoring Public Spaces with Heterogeneous Sensors ................................................................................. 281
  Luca Filipponi, Andrea Vitaletti, Giada Landi, Vincenzo Memeo, Giorgio Laura,
  and Paolo Pucci

SENSORCOMM 13: PESMOSN I

Sensor Information Decay Process Modeling ................................................................................................................................. 287
  Vincent Huang and Jie Chu

Initial Field Test Experiments and Failure Mechanisms for a Wireless Monitoring System for Home Care ...................................................................................... 293
  Markku J. Rossi and Simo Ojala

MAC Level Data Aggregation Algorithm in Wireless Sensor Networks ........................................................................................................................ 299
  Saeyoung Ahn, Hyunjae Shin, Youngjun Jo, Heongwoo Nam, and Sunshin An

  Eduard Kravcenko, Michael Niedermayer, Stephan Gutkowski, Nils F. Nissen,
  Stephan Benecke, Andreas Middendorf, Andreas Middendorf, and Herbert Reichl

SENSORCOMM 14: PESMOSN II

A Simulation Study of IEEE 802.15.4 Sensor Networks in Industrial Applications by System-Level Modeling ................................................................. 311
  Wan Du, David Navarro, and Fabien Mieyeville

Wireless Sensor Network for Point Positioning a Falling Rocket Projectile in an Explosive Testing Zone .................................................................................. 317
  Hairong Yan, Youzhi Xu, and Zhiguang Wang

Discovery of Configurations for Indoor Wireless Sensor Networks through Use of Simulation in Virtual Worlds .............................................................................. 323
  Valentina Baljak and Shinichi Honiden
A Knowledge-Based Multi-agent Geo-simulation Framework: Application to Intelligent Sensor Web Deployment .......................................................... 329
  Mehdi Mekni and Hedi Haddad

SENSORCOMM 15: PESMOSN III

Automatic Generation of WSN Simulations: From Callas Applications to VisualSense Models .......................................................... 336
  Duarte Vieira and Francisco Martins

A Survey of RF-Propagation Simulation Tools for Wireless Sensor Networks .......................................................... 342
  Marko Korkalainen and Mikko Sallinen

A SystemC Based Framework for the Evaluation of Proactive Power-Management Approaches in Distributed Energy Harvesting Systems .................................................................................. 348
  Rolf Thomasius and Stephan Guttowski

A Branch and Bound Heuristic for the Flow Shop Problem .......................................................... 352
  Hamid Hentous and Billal Merabti

SENSORCOMM 16: RASQOFT I

Research on Early-Warning Detecting Tasks Re-scheduling and Sensor Resources Allocation Strategy of Midcourse Maneuverable Ballistic Targets .......................................................... 357
  Tang Shao-xun, Yi Xian-qing, and Luo Xue-shan

INSPIRE-DB: Intelligent Networks Sensor Processing of Information Using Resilient Encoded-Hash DataBase .......................................................................................... 363
  Vasanth Iyer, S. Sitharama Iyengar, Garmiela Rama Murthy, Kannan Srinathan, Vir Phoha, and Mandalika B. Srinivas

An Efficient De Bruijn Graph Based Fault Tolerant Sensor Networks Design .................................................................................. 369
  Anas Abu Taleb, Jimson Mathew, and Dhiraj K. Pradhan

Efficient Spectrum Allocation Using Case-Based Reasoning and Collaborative Filtering Approaches .................................................................................. 375
  Yenumula B. Reddy

SENSORCOMM 17: SEMOSN I

Revisiting Key-Swapping Collusion Attack on Distributed Sensor Networks .......................................................... 381
  Thanh Dai Tran and Johnson I. Agbinya

Improving the Robustness of Distributed Range-Based Localisation Algorithms .................................................................................. 389
  Silas Francisco and Carlos Ribeiro

CiNetView - Graphic Interface for Wireless Sensor Network Deployment and Monitoring .................................................................................. 395
  Ismo Hakala, Timo Hongell, and Jari Luomala

  Daniel-Ioan Curic, Madalin Plastoi, Ovidiu Banias, Constantin Volosencu, Roxana Tudoroiu, and Dan Pescaru
SENSORCOMM 18: UNWAT I

A Discovery Process for Initializing Underwater Acoustic Networks ..........................................................408
Joseph A. Rice and Chee Wei Ong

Tracking Source azimuth Using a Single Vector Sensor ..............................................................................416
Paulo Felisberto, Paulo Santos, and Sérgio M. Jesus

Underwater Wireless Sensor Network ........................................................................................................422
Jan Erik Faugstadmo, Magne Pettersen, Jens M. Hovem, Arne Lie, and Tor Arne Reinen

SENSORCOMM 19: RASQOFT II

Optimal Rate Allocation for Gathering Correlated Data with Distortion
Guarantee in Sensor Networks ..........................................................................................................................428
Chun-Lung Lin, Kai-Chao Yang, Chuan-Yu Cho, Jia-Shung Wang, and Hsin-Hua Lee

Hierarchical Data Management for Spatial-Temporal Information in WSNs ........................................435
Kai-Chao Yang, Yuan-Cheng Yang, Chun-Lung Lin, and Jia-Shung Wang

Do Sensed Atmospheric Variables Affect to the Network QoS Parameters in WLANs? .................................441
Diana Bri, Sandra Sendra, Miguel Garcia, and Jaime Lloret

Measurement-Based Admission Control in Wireless Sensor Networks ..........................................................447
Ibrahim Orhan and Thomas Lindh

SENSORCOMM 20: UNWAT II

Miniaturized Implantable Wireless Sensor System for Realtime Measurement of Well-Being of Fishes ..............................................................................................................................453
Carsten Brockmann, Volker Großer, Jan Hefer, Stephan Guttowski, and Herbert Reichl

Experimental Studies of Underwater Acoustic Communications over Multipath Channels ..........................458
Guosong Zhang, Jens M. Hovem, Hefeng Dong, and Lanbo Liu

Compensating for Source Depth Change and Observing Surface Waves Using Underwater Communication Signals .........................................................................................................................................462
Salman Ijaz, António Silva, and Sérgio M. Jesus

SENSORCOMM 21: SEMOSN II

Random Distribution for Data Survival in Unattended Wireless Sensor Networks ........................................468
Thi My Y Vo and Jerome Talim

Efficient and Robust Secure Aggregation of Encrypted Data in Sensor Networks ........................................472
Jacques M. Bahi, Christophe Guyeux, and Abdallah Makhoul
Toward Resilient Routing in Wireless Sensor Networks: Gradient-Based Routing in Focus ..................................................................................................................................................478
Ochirkhand Erdene-Ochir, Marine Minier, Fabrice Valois, and Apostolos Kountouris

SENSORCOMM 22: APASN IV
Dynamic Location Update Scheme for Mobile Sinks in Wireless Sensor Networks ..................................................................................................................................................484
Sang-Ha Kim, Fucai Yu, Euisin Lee, and Soochang Park
Receiver-Based Routing Service for T-MAC Protocol ..................................................................................................................................................489
Adrian Fr. Kacsó and Ulrich Schipper
Pizza Forwarding: A Beaconless Routing Protocol Designed for Realistic Radio Assumptions ..................................................................................................................................................495
Ibrahim Amadou and Fabrice Valois
Sensor Network to Measure Electric Parameters ..................................................................................................................................................501
Eduardo Lluna, A. Edith Navarro, Diego Ramirez, and Silvia Casans

SENSORCOMM 23: MECSN I
An Energy Estimation Model for Mobile Sensor Networks ..................................................................................................................................................507
Muhammad Tariq, Martin Macuha, Yong-Jin Park, and Takuro Sato
Energy Efficiency Model of Network-Coded Cooperation in Wireless Sensor Networks ..................................................................................................................................................513
Dereje H. Woldegebreal and Holger Karl
Analysis of the Transient Characteristics of a Passive Micro Fuel Cell for Sensor Applications ..................................................................................................................................................521
Matthias Weiland, Herbert Reichl, and Stefan Wagner
Battery Lifetime Prediction Model for a WSN Platform ..................................................................................................................................................525
Fotis Kerasiotis, Aggeliki Prayati, Christos Antonopoulos, Christos Koulamas, and George Papadopoulos
On Autonomous Clustering in Wireless Sensor Networks with Directional Antennas ..................................................................................................................................................531
Ying-Chih Chen, Pei-Lun Chung, and Chih-Yu Wen

SENSORCOMM 24: APASN V
Programming iMote Networks Made Easy ..................................................................................................................................................539
Michel Bauderon, Stéphane Grumbach, Daqing Gu, Xin Qi, Wenwu Qu, Kun Suo, and Yu Zhang
A Smart Gateway for Health Care System Using Wireless Sensor Network ..................................................................................................................................................545
Yaoming Chen, Wei Shen, Hongwei Huo, and Youzhi Xu
Marjan Radi, Behnam Dezfooli, Shukor Abd Razak, and Kamalrulnizam Abu Bakar
Performance Enhancement Effects of RFID: An Evaluation Model
and Empirical Application ................................................................. 558
Yong-Jae Park and Myung-Hwan Rim

Enabling Sensor as Virtual Services through Lightweight Sensor Description ........................................ 564
Sarfraz Alam and Josef Noll

SENSORCOMM 25: APASN VI

SELARP: Scalable and Energy-Aware Learning Automata-Based Routing
Protocols for Wireless Sensor Networks ................................................................. 570
Amir Hosein Fathy Navid

The CLARITY Modular Ambient Health and Wellness Measurement Platform .................................................. 577
Michael Walsh, Michael O’Grady, Mauro Dragone, Richard Tynan,
Antonio Ruzzelli, John Barton, Brendan O’Flynn, Gregory O’Hare,
and Cian O’Mathuna

Data Aggregation with Spatially Correlated Grouping Technique
on Cluster-Based WSNs ........................................................................ 584
Chuan-Yu Cho, Chun-Lung Lin, Yu-Hung Hsiao, Jia-Shung Wang,
and Kai-Chao Yang

A Time Backoff-Based Energy-Efficient Geographical Forwarding for Wireless
Sensor Networks ........................................................................... 590
Jaehyun Kim, Jaiyong Lee, and Seoggyu Kim

SENSORCOMM 26: MECSN II

Analysis of Power Consumption and Efficient Power Saving Techniques
for MIMO-OFDM-Based Wireless LAN Receivers ......................................................... 597
Il-Gu Lee, Jung-Bo Son, Eun-Young Choi, Je-Hun Lee, and Sok-Kyu Lee

Harvesting at Locations with Limited Solar Radiation ........................................... 602
Sebastian Bader and Bengt Oelmann

Performance Analysis of Sensor Placement Strategies on a Wireless Sensor
Network ........................................................................................................ 609
Majid Bayani Abbasy, Gabriela Barrantes, and Gabriela Marin

Relevant Sampling Applied to Event-Based State-Estimation ......................................... 618
Jan Willem Marck and Joris Sijs

SENSORCOMM 27: APASN VII

Clinic: A Service Oriented Approach for Fault Tolerance in Wireless Sensor
Networks ........................................................................................................ 625
Mohammad Hammoudeh, Sarah Mount, Omar Aldabbas, and Martin Stanton

Real-Time Monitoring and Detection of "Heart Attack" Using Wireless Sensor
Networks ........................................................................................................ 632
Kala John Kappiarukudil and Maneesha Vinodini Ramesh