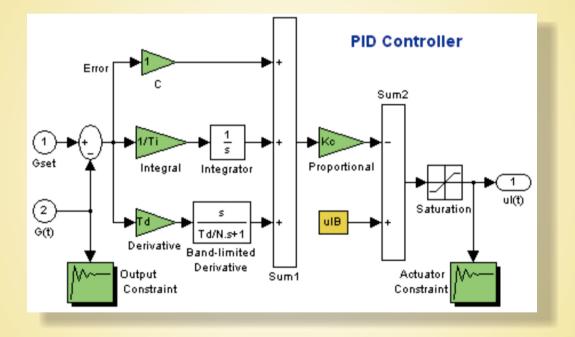


# Journal of Signal and Information Processing





www.scirp.org/journal/jsip

## **Journal Editorial Board**

ISSN Print: 2159-4465 ISSN Online: 2159-4481 http://www.scirp.org/journal/jsip

. . .

Editor-in-Chief	
Prof. Baozong Yuan	Beijing Jiaotong University, China
Executive Editor-in-Chief	
Prof. Qiuqi Ruan	Beijing Jiaotong University, China
Editorial Board	
Prof. Photios Anninos	Democritus University of Thrace, Greece
Prof. Roelof Kars Brouwer	Thompson Rivers University, Canada
Dr. Binghua Chai	University of Washington, USA
Dr. Wei-Ta Chu	National Chung Cheng University, Chinese Taipei
Dr. Jorge Manuel Miranda Dias	University of Coimbra, Portugal
Prof. Javier Diaz-Carmona	Instituto Tecnologico de Celaya, Mexico
Dr. Sara L. Gonzalez	University of Geneva, Switzerland
Dr. Yong Hu	The University of Hong Kong, Hong Kong (China)
Dr. Demongeot Jacques	University Hospital of Grenoble, France
Dr. Pierre Jannin	University of Rennes I, France
Prof. Kamaruzaman Jusoff	Universiti Putra Malaysia, Malaysia
Prof. Byung-Gyu Kim	Sunmoon University, South Korea
Prof. Vitaly Kober	Centro de Investigación Científica y de Educación Superior de
	Ensenada (CICESE), Mexico
Dr. Hyun Jung Kwon	Andrews University, USA
Prof. Jianwei Ma	Harbin Institute of Technology, China
Prof. Ping-Feng Pai	National Chi Nan University, Chinese Taipei
Prof. Siba Prasada Panigrahy	Konark Institute of Science & Technology, India
Prof. Gwi-Tae Park	Korea University, South Korea
Prof. Steffen B. Petersen	University of Aalborg, Denmark
Dr. Camillo Porcaro	University of Birmingham, UK
Prof. Lotfi Senhadji	University of Rennes I, France
Prof. Mu-Chun Su	National Central University, Chinese Taipei
Prof. Wei Wu	Dalian University of Technology, China
Dr. Qin Xin	Simula Research Lab, Norway
Prof. Jianhua Xu	East China Normal University, China
Prof. Bo-Suk Yang	Pukyong National University, South Korea
Prof. Lihua Yang	Sun Yat-sen (Zhongshan) University, China
Prof. Thomas Fang Zheng	Tsinghua University, China



#### TABLE OF CONTENTS

Volume 4 Number 2	May 2013
Design and Realization of Signal Processing Platform of Multi-Parameter Wearable Medie	cal Devices
X. Tan, B. F. Xu, Q. C. Liu	95
Online Finger Gesture Recognition Using Surface Electromyography Signals	
Q. Li, B. Li	101
Research on Different Feature Parameters in Speaker Recognition	
Q. Y. Liu, M. Q. Yao, H. Xu, F. Wang	106
A Fuzzy Controller for Blood Glucose-Insulin System	
A. Y. B. Sasi, M. A. Elmalki	111
Design of a Low-Noise Front-End Readout CSP-Shaper System for CZT Detectors	
H. M. Zeng, T. C. Wei, B. Gan, W. Gao	118
Design of a Low-Noise Front-End Readout Circuit for CdZnTe Detectors	
B. Gan, T. C. Wei, W. Gao, H. M. Zeng, Y. Hu	123
Design of a Novel Front-End Readout ASIC for PET Imaging System	
H. M. Zeng, T. C. Wei, L. K. Shen, W. Gao	129
Robust Palmprint Recognition Base on Touch-Less Color Palmprint Images Acquired	
H. F. Sang, Y. S. Ma, J. Huang	134
Heart Murmur Recognition Based on Hidden Markov Model	
L. S. Zhong, J. Z. Wan, Z. W. Huang, G. F. Cao, B. Xiao	140
Study of Scanning Dose Optimization on Chest and Abdomen Enhanced CT Imaging	
Z. W. Huang, L. S. Zhong, B. Xiao, G. F. Cao	145
Chirplet Signal and Empirical Mode Decompositions of Ultrasonic Signals for Echo Detection and Estimation	
Y. F. Lu, E. Oruklu, J. Saniie	149
Secured Transmission of ECG Signals: Numerical and Electronic Simulations	
G. Kenfack, A. Tiedeu	158
Maximal Phase Space Compression	
M. Dima, M. Petre	



A Modal Identification Algorithm Combining Blind Source Separation and State Space Realization		
S. McNeill	173	
Single Channel Source Separation Using Filterbank and 2D Sparse Matrix Factorizatio	n	
X. Y. Lu, B. Gao, L. C. Khor, W. L. Woo, S. Dlay, W. K. Ling, C. S. Chin		
A Multi-Band Speech Enhancement Algorithm Exploiting Iterative Processing for Enhancement Single Channel Speech	ancement of	
N. Upadhyay, A. Karmakar	197	
Adaptive Matrix/Vector Gradient Algorithm for Design of IIR Filters and ARMA Mod	els	
J. T. Olkkonen, S. Ahtiainen, K. Jarvinen, H. Olkkonen		
Medical Image Fusion Based on Wavelet Multi-Scale Decomposition		
H. P. Zhu, B. Wu, P. Ren		
Study of Supper Resolution Processing Methods for Thick Pinhole Image		
H. W. Xie, F. Q. Zhang, J. H. Zhang, Z. P. Xu, L. B. Li		

#### Journal of Signal and Information Processing (JSIP)

#### **Journal Information**

#### SUBSCRIPTIONS

The *Journal of Signal and Information Processing* (Online at Scientific Research Publishing, www.SciRP.org) is published quarterly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$59 per issue. To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

#### SERVICES

Advertisements Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies) Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. E-mail: sub@scirp.org

#### COPYRIGHT

Copyright©2013 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assumes no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

#### **PRODUCTION INFORMATION**

For manuscripts that have been accepted for publication, please contact: E-mail: jsip@scirp.org



Journal of Signal and Information Processing

2159.4465 Vol. 4 No. 2 May 2013

Scientifi Research



155N 2159-4465

# Journal of Signal and Information Processing

http://www.scirp.org/journal/jsip

JSIP, a quarterly journal, dedicated to the latest advancement of signal and information processing. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in the areas.

#### **Editor-in-Chief**

Prof. Baozong Yuan

Beijing Jiaotong University, China

Beijing Jiaotong University, China

#### **Executive Editor-in-Chief**

Prof. Qiuqi Ruan

### Subject Coverage

This journal invites original research and review papers that address the following issues in signal and information processing. Topics of interest are (but not limited to):

- ★Adaptive Filtering and Signal Processing
  ★Array Signal Processing
  ★Arrificial Intelligence and Neural Networks
  ★Biometrics and Authentification
  ★Chaos Theory in EEG Brain Signals
  ★Chaos Theory in MEG Brain Signals
  ★Communication Signal Processing
  ★Computer Vision and Virtual Reality
  ★Digital Signal Processing (DSP)
  ★Fuzzy System (including Fuzzy Control)
  ★Hardware Implementation for Signal Processing
  ★Image Processing and Understanding
- ★Information Fusion and Its Application
- ★MEG Signals Processing in Biomedical Research
- ★Multimedia and Human-Computer Interaction
- ★Non-Stationary Signal Analysis and Time-Frequency Analysis

- ★PDE for Image Processing
- ★Radar Signal Processing
- ★Signal Application and Others
- ★Signal Processing for Bio-Informatics
  ★Signal Processing for Bio-Medical and Cognitive Science
- ★Signal Processing for Cognitive Radio
- ★Signal Processing for Internet, Wireless and Communications
- ★Signal Processing for Security
- ★Signal Processing for Security
- ★Sonar Signal Processing and Localization
- ★Sparse Transform and Compressed Sensing
- ★Spectrum Estimation and Modeling
- ★Speech and Audio Coding
- ★Speech Synthesis and Recognition
- ★Statistic Learning, Machine Learning and Pattern Recognition
- ★Statistical Analysis of Brain Signals after Transcranial Magnetic Stimulation
- ★TF Spectrum Analysis and Wavelet
- ★Video Compression and Streaming
- ★Optical Signal Processing, Pattern Recognition

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the JSIP.

#### **Notes for Intending Authors**

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

#### Website and E-Mail

http://www.scirp.org/journal/jsip Email: jsip@scirp.org