

ISPA 2009
Technical Program

Tuesday, 15.09.2009

19⁰⁰-21⁰⁰ Welcome Reception and Registration

Wednesday, 16.09.2009

08³⁰-09⁰⁰ Opening Talk (T01)

Invited Talk (John Daugman, University of Cambridge)
Recognising persons by their iris patterns (T01)

10⁰⁰-10³⁰ Coffee Break

Session T01

Session T02

Session T03

10 ³⁰ -12 ⁵⁰	Signal Processing and Analysis (Theory and Methods) <i>Chair: Sicuranza</i>	Special Session on Endoscopic Image Processing and Analysis <i>Chair: Häfner, Vécsei, Liedgruber</i>	Special Session on Image and Signal Processing in Biometrics <i>Chair: Vielhauer, Wild</i>
	Lerga, Sucic, Sersic: Performance Analysis of the LPA-RICI Denoising Method	Liedgruber, Uhl: Endoscopic Image Processing - An Overview	Konrad, Stögner, Uhl: Evolutionary Optimization of JPEG Quantization Tables for Compressing Iris Polar Images in Iris Recognition Systems
	Valantinas: On the Use of Le Gall Wavelets in Implementing Locally Progressive Digital Signal Coding Idea	Hegenbart, Kwitt, Liedgruber, Uhl, Vécsei: Impact of Duodenal Image Capturing Techniques and Duodenal Regions on the Performance of Automated Diagnosis of Celiac Disease	Adam, Rossant, Micovicova, Amiel: Iris Identification based on a Local Analysis of the Iris Texture
	Milić, Čertić: Recursive Two-Channel Filter Banks Based on FRM Approach	Oh, Rajbal, Muthukudage, Tavanapong, Wong, de Groen: Real-Time Phase Boundary Detection in Colonoscopy Videos	Breitenbach, Chawdhry: Image Quality Assessment and Performance Evaluation for Multimodal Biometric Recognition using Face and Iris
	Rim, Cherif, Besbes: Oversampled filter bank for frequency estimation	Hoeller, Penne, Hornegger, Schneider, Gillen, Feußner, Jahn, Guttierrez, Penne, Wittenberg: Clinical Evaluation of Endorientation: Gravity related rectification for endoscopic images	Rathgeb, Uhl: An Iris-Based Interval-Mapping Scheme for Biometric Key Generation
	Abramovich, Frazer, Johnson, Spencer: Iterative Adaptive Kronecker Receiver for MIMO Over-The-Horizon Radar	Szczyński, Klepaczko: Selecting Texture Discriminative Descriptors of Capsule Endoscopy Images	Gottschlich, Mihăilescu, Munk: Robust Orientation Field Estimation in Fingerprint Images with Broken Ridge Lines
		Bergen, Ruthotto, Münzenmayer, Rupp, Paulus, Winter: Feature-Based Real-Time Endoscopic Mosaicking	Hotz: Intrinsic Coordinates for Fingerprints Based on their Longitudinal Axis
12 ⁵⁰ -14 ⁰⁰	Lunch Break		

ISPA 2009
Technical Program – Wednesday, 16.09.2009

14⁰⁰-15⁰⁰ **Invited Talk (Dominik Engel and Martin Aster, SONY DADC Austria AG)**
Video Processing Activities & Applied Research at Sony DADC (T01)

15⁰⁰-15¹⁰ 10 Minute Break

Session T01

Session T02

Session T03

15 ¹⁰ -16 ⁴⁰	Signal Processing and Analysis (Advanced Methods) <i>Chair: Squartini</i>	Special Session on New Advances in Vascular Imaging and Modelling <i>Chair: Materka, Reichenbach</i>	Special Session on Image and Signal Processing in Biometrics <i>Chair: Vielhauer, Wild</i>
	Shuren, Zhong: Extraction of Feature Information in EEG Signal by Virtual EEG Instrument with the Functions of Time-Frequency Analysis	Deistung, Reichenbach: Correction of Venous Contamination in Time-of-Flight MR Angiography by Using Magnetic Susceptibility Maps	Jassim, Al-Assam, Sellahewa: Improving Performance and Security of Biometrics Using Efficient and Stable Random Projection Techniques
	Moro, Mumolo, Nolich: Ergodic Continuous Hidden Markov Models for Workload Characterization	Klepaczko, Kocinski, Materka, Chekenya, Lundervold: Texture Analysis in Application to Quantitative Study of 3D Vascular Tree Images	Weinhandel, Stögner, Uhl: Experimental Study on Lossless Compression of Biometric Sample Data
	Huynh: Frequency Estimation of Musical Signals using STFT and Multitapers	Strzelecki, Szczypinski, Materka, Kocinski, Sankowski: Level-set segmentation of noisy 3D images of numerically simulated blood vessels and vascular trees	Bringer, Chabanne, Kindarji: Anonymous Identification with Cancelable Biometrics
		Materka, Strzelecki, Szczypinski, Kocinski, Deistung, Reichenbach: Arteries tracking in simultaneous TOF-SWI MR images: image characteristics and preliminary results	Scheidat, Dittmann: Biometric Hash Generation and User Authentication based on Handwriting using Secure Sketches
16 ⁴⁰ -17 ¹⁰	Coffee Break		
17 ¹⁰ -18 ⁵⁰	Signal Processing and Analysis (Speech and Audio) <i>Chair: Puder</i>	Special Session on Multimedia Security and Watermarking <i>Chair: Meerwald</i>	Special Session on Image and Signal Processing in Biometrics <i>Chair: Vielhauer, Wild</i>
	Abe, Matsumoto, Hashimoto: Automatic parameter optimization of ϵ -filter for acoustical signal based on cross correlation	Schott, Dittmann, Vielhauer: AnnoWaNO: An annotation watermarking framework	Alonso-Fernandez, Fierrez, Gilperez, Ortega-Garcia: Impact of Time Variability in Off-line Writer Identification and Verification
	Rosenkranz: Modeling the Temporal Evolution of LPC Parameters for Codebook-Based Speech Enhancement	Meerwald, Koidl, Uhl: Targeted Attacks on Quantization-based Watermarking Schemes	Humm, Ingold, Hennebert: Spoken Handwriting for User Authentication using Joint Modelling Systems
	Mahabadi, Hejazi, Akhaee: A Combinational Adaptive Noise Canceller Using Filter bank	Mostefa, Braci, Delpha, Boyer, Khamadja: Improved Performances of Scalar Costa Scheme for Images Watermarking in an Independent Domain	Dehghani, Moghaddam: On-line Signature Verification Using ANFIS
	Akhtar, Mitsuhashi: Hybrid Active Noise Control System for Correlated and Uncorrelated Noise Sources	Yang, Busch, Niu: Perceptual Image Encryption Via Reversible Histogram Spreading	
	Resende: A GSC-Type Structure for FIR-IFIR Hybrid Echo Canceling		
19 ³⁰ -21 ⁰⁰	City Tour		

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Technical Program – Thursday, 17.09.2009

08 ³⁰ -09 ³⁰	Invited Talk (Henning Puder, Siemens, Erlangen, Germany) Hearing aids: An overview of the state-of-the-art, challenges, and future trends of an interesting audio signal processing application (T01)		
09 ³⁰ -10 ⁰⁰	Coffee Break		
	Session T01	Session T02	Session T03
10 ⁰⁰ -11 ²⁰	Image Processing and Analysis (Detection, Labeling and Tracking) <i>Chair: Kwitt, Viertel</i>	Special Session on Analysis and Visualization of Dynamic Images in Medical Applications <i>Chair: Munthe-Kaas</i>	Special Session on Stereo and 3D-Image/Video Processing <i>Chair: Bleyer, Gelautz</i>
	Wilhelm, Monier, Thomas, Rückert: SPA – A System for Analysis of Indoor Team Sports Using Video Tracking and Wireless Sensor Network	Zöllner, Heilmann, Walczak, Volk, Schad: Tumor Tissue Analysis by Self Organizing Maps from Combined DCE-/DSC-MRI data	Smolic, Mueller, Merkle, Vetro: Development of a new MPEG Standard for Advanced 3D Video Applications (40min)
	Beleznai, Viertel, Birchbauer: A pedestrian detection system combining motion detection, spatial grouping and classification	Everts, Bekker, Roerdink: Visualizing White Matter Structure of the Brain using Dijkstra's Algorithm	
	Samarzija, Ribaric: An Autonomy Oriented Computing Approach to Image-Component Labeling	Anderlik, Munthe-Kaas, Øye, Eikefjord, Rørvik, Ulvang, Zöllner, Lundervold: Quantitative assessment of kidney function using dynamic contrast enhanced MRI – Steps towards an integrated software prototype	Bleyer, Gelautz: Temporally Consistent Disparity Maps from Uncalibrated Stereo Videos
	Pathan, Al-Hamadi, Michaelis: Multi-Object Tracking Using Semantic Analysis and Kalman Filter	Engel, Toennies, Brechmann: Surface-based Anatomic-Functional Parcellation of the Auditory Cortex	Humenberger, Zinner, Kubinger: Performance Evaluation of a Census-Based Stereo Matching Algorithm on Embedded and Multi-Core Hardware
11 ²⁰ -11 ³⁰	10 Minute Break		
11 ³⁰ -12 ⁵⁰	Peters: Vision-Based Detection of Personal Rapid Transit Guideway	Oeltze, Hauser, Rørvik, Lundervold, Preim: Visual Analysis of Cerebral Perfusion Data —Four Interactive Approaches and a Comparison	Mooser, Hack, Sennhauser, Székely: Estimation of Affine Transformations directly from Tomographic Projections
	Le: Pattern-Based Corner Detection Algorithm	Berkane, Njiwa, Clarysse, Magnin, Zhu: Reconstruction of Cardiac Cine MR Images Using Analytic Image and Neural Networks	Bernau: Efficient Image Processing in Fourier Holography for Moving Images
	Schlosser, Beichel: Fast Shape Retrieval Based on Shape Contexts	Picq, Pousin, Clarysse: Optimal Extended Optical Flow and Statistical Constraint	
	Wang, Zhang, Clarke, Yakubovich: A New Image Labeling Method Based on Content-based Image Retrieval and Conditional Random Field		
12 ⁵⁰ -14 ⁰⁰	Lunch Break		

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Technical Program – Thursday, 17.09.2009

14 ⁰⁰ -15 ⁰⁰	Invited Talk (Stefan Katzenbeisser, University of Darmstadt) Signal Processing in the Encrypted Domain: Analyzing signals privately (T01)		
15 ⁰⁰ -15 ³⁰	Coffee Break		
	Session T01	Session T02	Session T03
15 ³⁰ -17 ¹⁰	Image Processing and Analysis (Detection, Labeling and Tracking) <i>Chair: Bajic</i>	Special Session on Parallel and Distributed Computing in Image Processing, Video Processing, and Multimedia <i>Chair: Kutil</i>	Special Session on Advanced Algorithms for Automotive Multimedia Applications <i>Chair: Piazza</i>
	Bräuer-Burchardt: Roughness Estimation of Ultra Thin Multilayer Coatings in Cross-Section Images with Poor SNR Using Edge Localization	Piazza: Recent Developments and Future Directions in Parallel Processing of Remotely Sensed Hyperspectral Images	Cifani, Montesi, Squartini: A PEM-AFROW based algorithm for Acoustic Feedback Control in Automotive Speech Reinforcement Systems
	Hatsuda: Robust and Accurate Recognition of Veins in Fruit Fly Wings	Laan, Jalba, Roerdink: Accelerating Wavelet-Based Video Coding on Graphics Hardware using CUDA	Cecchi, Palestini, Peretti, Piazza, Carini: Multipoint Equalization of Digital Car Audio Systems
	Bajic: Fusion and Visualisation of the Color and Long Wave Infrared Images	Lemeire: Towards Fully User Transparent Task and Data Parallel Image Processing	Ackermann, Liu, Glesner: Extended Distance Transform Approach for Robust Vehicle Detection
	Demjén, Marek: Interactive Algorithm for Accurate Segmentation of Fiber-like Objects	Rodríguez-Fernández, Vilaríño, Pardo: A Pixel-Parallel Moving Object Segmentation and Tracking Algorithm for Video Surveillance Applications	Schmidt, Krini: Model-Based Speech Enhancement for Automotive Applications
			Carini, Omicciolo, Sicuranza: Multiple Position Room Response Equalization: Frequency Domain Prototype Design Strategies
19 ⁰⁰ -24 ⁰⁰	Guided Castle Tour & Dinner		

ISPA 2009
 Technical Program – Friday, 18.09.2009

08 ³⁰ -09 ³⁰	Invited Talk (H. Vincent Poor, Princeton University) Collaborative Signal Processing in Wireless Sensor Networks (T01)		
09 ³⁰ -10 ⁰⁰	Coffee Break		
	Session T01	Session T02	Session T03
10 ⁰⁰ -11 ²⁰	<p>Image Processing and Analysis (Image Quality and Compression) <i>Chair: Stütz</i></p> <p>Park, Kim, Choi, Yoon, Kim: Novel context modeling scheme for lossless image compression using statistical reference</p> <p>Delcourt: Comparative Study of Multi-2D, Full 3D and Hybrid Strategies for Multi/Hyperspectral Image Compression</p> <p>Taşmaz, Erçelebi: Image Enhancement via Space-Adaptive Lifting Scheme</p>	<p>Special Session on Image and Signal Analysis in Psychophysiomatics <i>Chair: Pham, Oyama-Higa</i></p> <p>Pham: Psychophysiomatics: A New Perspective in Computational Life Science</p> <p>Takahashi: Remarks on Computational Emotion Recognition from Vital information</p> <p>Juan: Time-Series Representation of Biological Information Utilizing a Constellation Graph</p> <p>To, Pham: Analysis of Cardiac Imaging Data using Decision Tree based Parallel Genetic Programming</p>	<p>Special Session on Digital Shape Analysis: Theory and Applications <i>Chair: Lindblad, Sladoje</i></p> <p>Mochizuki, Fujii, Shibata, Sakai: Fast Identification of Player Position in Soccer Broadcast Video by Block-based Camera View Angle Search</p> <p>Lindblad, Čurić, Sladoje: On set distances and their application to image registration</p> <p>Imamura, Oota, Hashimoto: Improvement of Convergence and Stability in Moving Object Extraction by the Level Set Method</p> <p>Mata, Pastor, Miraut, Rodríguez: Combining visual relevance criteria into adaptive mesh simplification techniques</p>
11 ²⁰ -11 ³⁰	10 Minute Break		
11 ³⁰ -12 ⁵⁰	<p>Image Processing and Analysis (Medical Applications) <i>Chair: Golodetz</i></p> <p>Verdu-Monedero, Larrey-Ruiz, Morales-Sánchez, Sancho-Gómez: Automatic DRR Enhancement for Patient Positioning in a Radiotherapy Treatment</p> <p>Susan, Hanmandlu, Madasu, Lovell: Detection of Skin Lesions by Fuzzy Entropy based Texel Identification</p> <p>Golodetz, Voiculescu, Cameron: Automatic Spine Identification in Abdominal CT Slices using Image Partition Forests</p> <p>Meilinger, Schmidgunst, Schütz, Lang: Alignment correction during metal artifact reduction for CBCT using mutual information and edge filtering</p>	<p>Oyama-Higa, Miao: Effect of Anesthesia on Chaotic Dynamics in Finger Plethysmograms</p> <p>Sharma, Cheikh, Hardeberg: Face Saliency in Various Human Visual Saliency Models</p> <p>Oyama-Higa, Pham, Itoh: Influence of Fractal Dimensions on Stimuli on Searching Reaction with Focus on Effects of Objects included in Stimuli Images</p>	<p>Kylberg, Sintorn, Uppström, Ryner: Local intensity and PCA based detection of virus particle candidates in transmission electron microscopy images</p> <p>Hajdu, Veres, Tanács, Harangozó: Object subsampling strategies to improve computational performance</p> <p>Nagy: Isometric transformations of the dual of the hexagonal lattice</p> <p>Kovács, Kajtár, Méhes, Fazekas: Fast Detection of Chromosome Metaphases in Digitalized Microscopic Slides</p>
12 ⁵⁰ -14 ⁰⁰	Lunch Break		

ISPA 2009
 Technical Program – Friday, 18.09.2009

	Session T01	Session T02	Session T03
14 ⁰⁰ -16 ⁰⁰	<p>Image Processing and Analysis (Super-Resolution Techniques and Image Reconstruction and Image Retrieval) <i>Chair: Ma</i></p> <p>Huber-Mörk: Image Super-Resolution for Line Scan Cameras based on a Time Delay Super-Resolution Principle</p> <p>Wang, Ralph: An Analysis of a Robust Super Resolution Algorithm for Infrared Imaging</p> <p>Villena, Vega, Molina, Katsaggelos: Bayesian Super-Resolution Image Reconstruction using an ℓ^1 prior</p> <p>Ma: Approximate statistical properties of reconstructed images using model-based bootstrapping</p> <p>Thomee, Huiskes, Bakker and Lew : An Exploration-Based Interface for Interactive Image Retrieval</p> <p>Sakji-Nsibi, Benazza-Benyahia: Copula-based statistical models for multicomponent image retrieval using a Bayesian copula selection</p>	<p>Special Session on Recent Advances in Designing and Implementing Computationally-Efficient Digital Filters and Filter Banks <i>Chair: Saramäki</i></p> <p>Lehto, Saramäki, Vainio, Mitra: Synthesis of Narrowband Differentiators with a Piecewise-Polynomial Impulse Response with Parallel-Branch Structures</p> <p>Yu, Lim: Optimization of FIR Filters in Subexpression Space With Constrained Adder Depth</p> <p>Matsumoto: An improved directional difference filter for impulse noise reduction</p> <p>Akkoul, Ledee, Leconge, Harba: A New detector for Switching Median Filter</p> <p>Abdelkader, Ahmed, Abdennacer, Nasreddine: A Filter Banks Design Using A Multi-objective Genetic Algorithm For Embedded Image Coding Scheme</p>	<p>Special Session on Image and Signal Processing in Wood Science and Technology <i>Chair: Entacher, Petutschnigg</i></p> <p>Skog, Oja: Combining X-ray and Three-Dimensional Scanning of Sawlogs – Comparison between One and Two X-ray Directions</p> <p>Lee, Araman, Abbott, Matthew Winn: Automated Grading, Upgrading, and Cuttings Prediction</p> <p>Grabner, Salaberger, Okochi: The Need of High Resolution μ-X-ray CT in Dendrochronology and in Wood Identification</p> <p>Standfest, Petutschnigg, Dunky: 2D Pore Size Distribution in Particleboard and Oriented Strand Board</p> <p>Wenersson, Hendriks, Brun: Generating synthetic micro-CT images of wood fibre materials</p> <p>Norell: Creating Synthetic Log End Face Images</p>
16 ⁰⁰ -16 ³⁰	Coffee Break		
16 ³⁰ -17 ⁵⁰	<p>Image Processing and Analysis (Miscellaneous Applications) <i>Chair: Poliščuk</i></p> <p>Schmitt, Mersmann, Schoenberg: Machine Vision Industrialising the Textile-Based FRP Production</p> <p>Oerlemans, Zhang, Lew: Construction of Texture Features</p> <p>Ang: Non-Rigid Surface Matching to Unmask Scoliotic Deformity in Surface Topography</p> <p>Urhan: Multiple Description Scalar Quantization Based Image Coding using Optimal Filtering</p>	<p>Image Processing and Analysis (Video Coding) <i>Chair: Bleyer</i></p> <p>Ndjiki-Nya, Doshkov, Köppel: Optimization of Video Synthesis by Means of Cost-Guided Multimodal Photometric Correction</p> <p>Hofbauer, Uhl: Cost of In-Network Adaption of MC-EZBC for Universal Multimedia Access</p> <p>Li: Direct 3-D DCT-to-DCT Resizing Algorithm for Video Coding</p> <p>Jordan, Seitner, Bleyer, Gelautz: Runtime-Optimised Intra-4x4 Mode-Decision for H.264/AVC Video Encoding</p>	<p>Special Session on Forensic Image and Video Processing <i>Chair: Maltoni</i></p> <p>Cervelli, Dardi, Carrato: Comparison of Footwear Retrieval Systems for Synthetic and Real Shoe Marks</p> <p>Dardi, Cervelli, Carrato: An Automatic Footwear Retrieval System for Shoe Marks from Real Crime Scenes</p> <p>Cappelli, Maio, Maltoni: Semi-automatic Enhancement of Very Low Quality Fingerprints</p> <p>Gao: A Novel Model-Based Approach for 3D Footwear Outsole Feature Extraction</p>
17 ⁵⁰ -18 ⁰⁰	10 Minute Break		
18 ⁰⁰ -19 ⁰⁰	<p>Elmezain, Al-Hamadi, Pathan, Michaelis: Spatio-Temporal Feature Extraction-Based Hand Gesture Recognition for Isolated American Sign Language and Arabic Numbers</p> <p>Poliščuk: Measurement of Lubrication Parameters Based on Image Processing of Chromatic Interferograms</p>	<p>Signal Processing and Analysis (Theory and Applications) <i>Chair: Carini</i></p> <p>Atallah, Forster, Barbot, Larzabal: Tractable forms of some deterministic MSE lower bounds for biased estimation</p> <p>Yadav, Kalra: Fault Diagnosis of Internal Combustion Engine using Empirical Mode Decomposition</p> <p>Goodarzi: Application of Spectral Subtraction for Reducing Industrial Noises</p> <p>Salem: Fractionally Spaced Channel Shortening by Subchannels SINR Maximization in Multicarrier Systems</p>	
19 ⁰⁰ -19 ²⁰	Closing (T01)		
20 ⁰⁰ -23 ⁰⁰	Get Together (Mülln)		