



Digital Image Computing: Techniques and Applications

1-3 December, 2008
Canberra, Australia



IEEE
computer
society



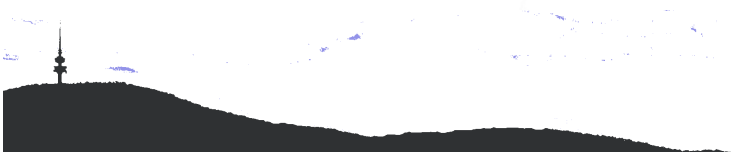
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Digital Image Computing: Techniques and Applications

1 - 3 December 2008

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DICTA is the main Australian venue for the presentation of advances and research results on digital image computing. From its establishment, DICTA has been a biannual meeting. In 2008, it will turn into an annual conference.

Each submitted manuscript was reviewed by at least two members of the Program Committee. Accepted papers meet the DEST E1 requirements and were organised into a number of oral and poster sessions.

The conference also includes four keynote addresses by Peter Corke, P. Anandan, Fatih Porikli and Rama Chellappa.

Session Programme

Monday 1st December 2008	Tuesday 2nd December 2008	Wednesday 3rd December 2008
Coffee and tea <i>8:15 am – 8:45 am</i>	Coffee and tea <i>8:30 am – 9:00 am</i>	Coffee and tea <i>8:30 am – 9:00 am</i>
Opening Prof. Terry Caelli <i>8:45 am – 9:00 am</i>		
Keynote 1 Dr. Peter Corke <i>9:00 am – 10:00 am</i>	Keynote 2 Dr. Fatih Porikli <i>9:00 am – 10:00 am</i>	Keynote 4 Prof. Rama Chellappa <i>9:00 am – 10:00 am</i>
Oral Session 1 Estimation <i>10:00 am – 10:40 am</i>	Oral Session 5 Restoration <i>10:00 am – 10:40 am</i>	Oral Session 8 Medical Imaging <i>10:00 am – 10:40 am</i>
Morning tea <i>10:40 am – 11:00 am</i>	Morning tea <i>10:40 am – 11:00 am</i>	Morning tea <i>10:40 am – 11:00 am</i>
Oral Session 2 Segmentation and Feature Extraction <i>11:00 am – 12:20pm</i>	Oral Session 6 Object Detection and Classification <i>11:00 am – 12:20pm</i>	Oral Session 9 Applications <i>11:00 am – 12:20pm</i>

Session Programme (contd.)

Monday 1st December 2008	Tuesday 2nd December 2008	Wednesday 3rd December 2008
Lunch <i>12:20 pm – 1:20pm</i>	Lunch <i>12:20 pm – 1:20pm</i>	Lunch <i>12:20 pm – 1:20pm</i>
Oral Session 3 Medical Imaging <i>1:20 pm – 2:40pm</i>	Keynote 3 Dr. P Anandan <i>1:20 pm – 2:20pm</i>	Oral Session 10 Coding <i>1:20 pm – 2:40pm</i>
	Poster Session 2 Computer Vision <i>2:20 pm – 3:40pm</i>	
Poster Session 1 Face Recognition and Remote Sensing <i>2:40 pm – 4:00pm</i>	Oral Session 7 Tracking and Surveillance <i>3:40 pm – 5:20pm</i>	Poster Session 3 Pattern Recognition <i>2:40 pm – 4:00pm</i>
Oral Session 4 Pattern Recognition and Learning <i>4:00 pm – 5:40pm</i>		Oral Session 11 DICTA – ACRA Joint Session <i>4:00 pm – 5:20pm</i>

Notes

Registration

The registration desk will open at the conference venue on the evening of Sunday 30 November 2008 from 2:00 pm to 5:30 pm. The registration will restart at 8:00 am on Monday 1 December 2008.

Getting to the Conference Venue

The Digital Image Computing: Techniques and Applications (DICTA) Conference will take place at the Rydges Lakeside in Canberra. on London Circuit, in the heart of Canberra. It can be reached by

Bus: Route information can be found here or by calling 13 17 10. The best way is to catch a bus to the City interchange and then walk to the Rydges Lakeside Hotel. Bus route 3 runs from the ANU and some northside suburbs and joins London Circuit right next to the venue.

Taxi: Canberra Cabs have a website; bookings can be made online or by calling 13 22 27.

Car: There is pay parking available over the road from the venue

On foot: The venue is an easy 10 minute walk from both the City centre and the Australian National University.

Lunch

Light lunch will be provided at the conference venue.

Afternoon Tea

Afternoon tea will be served at the Poster sessions.

Conference Dinner

The conference dinner is at the Old Parliament House (OPH), Canberra, on the 2nd December 2008 from 7:30 pm onwards. Buses will depart from the Rydges Lakeside Hotel at 6:20 pm. A complementary tour of OPH will be provided commencing at 6:45 pm. Drinks will be provided with the dinner and will be served until 11:00 pm.

APRS Meeting

The meeting is scheduled at the Rydges Lakeside Hotel from 5:30 pm to 6:15 pm on Tuesday 2nd December 2008.

Papers by Session

Monday 1st December 2008

Oral Session 1 – Estimation

10:00 am – 10:40 am

- Bridging Parameter and Data Spaces for Fast Robust Estimation in Computer Vision
Alireza Bab-Hadiashar and Reza Hoseinnezhad
- A New M-Estimator Approach for Global Motion Estimation
Nafisa Tarannum, Mark R. Pickering, and Michael R. Frater

Oral Session 2 – Segmentation and Feature Extraction

11:00 am – 12:20 pm

- Multi-scale Feature Extraction for 3D Models Using Local Surface Curvature
Huy Tho Ho and Danny Gibbins
- Moving Object Segmentation Using Improved Running Gaussian Average Background Model
Shu-Te Su and Yung-Yaw Chen
- Rigid Image Registration by Using Corner and Edge Contents with Application to Super-Resolution
Duangnapa Wangrattanapranee and Akinori Nishihara
- Improved GrabCut Segmentation via GMM Optimisation
Daniel Chen, Brenden Chen, George Mamic, Clinton Fookes, and Sridha Sridharan

Monday 1st December 2008

Oral Session 3 – Medical Imaging

1:20 pm – 2:40 pm

- Enhanced HMM for the Recognition of Sigma70 Promoters in Escherichia coli
Jinhai Cai
- Tracking of Blood Vessels in Retinal Images Using Kalman Filter
Tamir Yedidy and Richard Hartley
- Nuclei Extraction Based on Multi-channel Information
Jun Zhang and Jinglu Hu
- Edge Linking Based Method to Detect and Separate Individual C. Elegans Worms in Culture
Nikzad Babaii Rizvandi, Aleksandra Pizurica, Wilfried Philips, and Daniel Ochoa

Poster Session 1 – Face Recognition and Remote Sensing

2:40 pm – 4:00 pm

- Averaged Gabor Filter Features for Facial Expression Recognition
Seyed Mehdi Lajevardi and Margaret Lech
- Facial Expression Recognition Using Neural Networks and Log-Gabor Filters
Seyed Mehdi Lajevardi and Margaret Lech

Monday 1st December 2008

- An Approach Using Mathematical Morphology and Support Vector Machines to Detect Features in Pipe Images
John Sebastian Mashford, Mike Rahilly, and Paul Davis
- Combinational Method for Face Recognition: Wavelet, PCA and ANN
Masoud Mazloom and Saeed Ayat
- Features-Pooling Blind JPEG Image Steganalysis
Chiew Kang Leng and Josef Pieprzyk
- Sequential Transmission of Remote Sensing Data Using a Linear Model to Update Change
Md. Al Mamun, Xiuping Jia, and Mike Ryan
- Classification of Buildings and Roads Using Support Vector Machine
Azarakhsh Rafiee and M.R. Sarajian
- On Traffic Density Estimation with a Boosted SVM Classifier
Zhidong Li, Evan Tan, Jing Chen, and Thanos Wassantachat
- Normalisation and Recognition of 3D Face Data Using Robust Hausdorff Metric
Clinton Fookes, George Mamic, Chris McCool, and Sridha Sridharan
- Soil Moisture Prediction with Feature Selection Using a Neural Network
Junlei Song, Dianhong Wang, Nianjun Liu, Li Cheng, Lan Du, and Ke Zhang

Monday 1st December 2008

- Band Selection for Hyperspectral Imagery
Using Affinity Propagation
Sen Jia, Yuntao Qian, and Zhen Ji
- Application of Radial Symmetry for Caldera
Detection
*Christine Jenkins, Jonathan Wan, Eun-Jung
Holden, Michael Dentith, Peter Kovesi, and Mike
Haederle*
- Individual Tree Crown Delineation
Techniques for Vegetation Management in
Power Line Corridor
*Zhengrong Li, Ross Hayward, Jinglan Zhang, and
Yuee Liu*
- Neural Network Implementation Using
CUDA and OpenMP
Honghoon Jang, Anjin Park, and Keechul Jung
- Automatic Approach for Emulsions Stability
Assessment in Microscope Images
*Yurney Vazquez, Antonio Bravo, Juan Mantilla,
and Mario Alayón*
- A Novel Shape Transformation Approach for
Quantizing Facial Expressions
Girija Chetty
- Evaluation of Maritime Vision Techniques
for Aerial Search of Humans in Maritime
Environments
*Paul Westall, Jason J. Ford, Peter O'Shea, and
Stefan Hrabar*
- Decision Fusion for Reliable Flood Mapping
Using Remote Sensing Images
Chandrama Dey, Xiuping Jia, and Donald Fraser

Monday 1st December 2008

Oral Session 4 – Pattern Recognition and Learning

4:00 pm – 5:40 pm

- Automatic Categorization of Image Regions Using Dominant Color Based Vector Quantization
Md Monirul Islam, Dengsheng Zhang, and Guojun Lu
- Exploiting Part-Based Models and Edge Boundaries for Object Detection
Josephine Sullivan, Oscar Danielsson, and Stefan Carlsson
- Visibility Classification of Rocks in Piles
Tobias Andersson and Matthew J. Thurley
- Texture Descriptors via Stable Distributions
Pattaraporn Khuwuthyakorn, Antonio Robles-Kelly, and Jun Zhou
- Learning Cascaded Reduced-Set SVMs Using Linear Programming
Junae Kim, Chunhua Shen, and Lei Wang

Tuesday 2nd December 2008

Oral Session 5 – Restoration

10:00 am – 10:40 am

- Thesholding and Character Recognition in Security Documents with Watermarked Background
Y.M. Alginahi
- Image Reconstruction from Contrast Information
Asim A. Khwaja and Roland Goecke

Oral Session 6 – Object Detection and Classification

11:00 am – 12:20 pm

- GPU-Accelerated KLT Tracking with Monte-Carlo-Based Feature Reselection
Julius Fabian Ohmer and Nicholas J. Redding
- An Approach for Enhancing the Results of Detecting Foreground Objects and Their Moving Shadows in Surveillance Video
Cahya Ong, Sijun Lu, and Jian Zhang
- Limits of Motion-Background Segmentation Using Fundamental Matrix Estimation
Shafriza Nisha Basah, Reza Hoseinmezhad, and Alireza Bab-Hadiashar
- Multi Cue Performance Evaluation Metrics for Tracking in Video Sequences
Gladis John, Mihai Lazarescu, and Geoff West

Tuesday 2nd December 2008

Poster Session 2 – Computer Vision and
Medical Imaging

2:20 pm – 3:40 pm

- Touching Cells Splitting by Using Concave Points and Ellipse Fitting
Xiangzhi Bai, Changming Sun, and Fugen Zhou
- GPU Accelerated Multimodal Background Subtraction
Peter Carr
- Mean Shape Models for Polyp Detection in CT Colonography
Ju Lynn Ong, Abd-Krim Seghouane, and Kevin Osborn
- Automatic Grid Segmentation of Populated Chessboard Taken at a Lower Angle View
K.Y. Tam, J.A. Lay, and D. Levy
- Texture Analysis in Lung HRCT Images
A. Tolouee, H. Abrishami-Moghaddam, R. Garnavi, M. Forouzanfar, and M. Giti
- Hidden Markov Model Filter Banks for Dim Target Detection from Image Sequences
John Lai, Jason J. Ford, Peter O'Shea, and Rodney Walker
- Multi-scale Cartoon Motion Capture and Retargeting without Shape Matching
Mohammad Rastegari and Niloofar Gheissari

Tuesday 2nd December 2008

- A Multistage Parallel Magnetic Resonance Image Reconstruction Method
Zhaolin Chen, Leigh Johnston, Nathan Faggian, Mike Kean, Jingxin Zhang, and Gary Egan
- A Method for Shape Analysis and Segmentation in MRI
Nathan Faggian, Zhaolin Chen, Leigh Johnston, Oh Se-Hong, Zang-Hee Cho, and Gary Egan
- Cross-Matching via Feature Matching for Camera Handover with Non-overlapping Fields of View
Nicholas J. Redding, Julius Fabian Ohmer, Judd Kelly, and Tristrom Cooke
- Realtime Visual Tracking of Aircrafts
Ajmal S. Mian
- Evaluation of Background Subtraction Methods
Sorayya Panahi, Samira Sheikhi, Shahrzad Hadadan, and Niloofar Gheissari
- 3D Face Reconstruction from 2D Images
W.N. Widanagamaachchi and A.T. Dharmaratne
- Graph-Cut Based Background Subtraction Using Visual Hull in Multiveiw Images
Seungki Min, Jungwhan Kim, Anjin Park, Gwangjin Hong, and Keechul Jung
- GATE: A Novel Robust Object Tracking Method Using the Particle Filtering and Level Set Method
Cheng Luo, Xiongcai Cai, and Jian Zhang

Tuesday 2nd December 2008

- A Fast, Segmentation-Free, Method for Constructing a Biomechanical Model of the Breast from DCE-MRI Data
Andrew Hill, Andrew Mehnert, and Stuart Crozier
- Interactive Motion Browse and Synthesis from Unorganized Motion Data Set
Yoshihiro Yasumuro, Taku Shirazawa, Muneyuki Sakata, Masataka Imura, Yoshitsugu Manabe, and Kunihiro Chihara
- Low Precision Global Motion Estimation for Video Compression- A Generalized Framework
K. Yang, M.R. Frater, E.H. Huntington, M.R. Pickering, and J.F. Arnold

Oral Session 7 – Tracking and Surveillance

3:40 pm – 5:20 pm

- Post-hoc Correction Techniques for Constrained Parameter Estimation in Computer Vision
Tony Scoleri
- Multi-view Human Motion Capture with an Improved Deformation Skin Model
Yifan Lu, Lei Wang, Richard Hartley, Hongdong Li, and Chunhua Shen
- A Stereo Self-Adjustment Methodology for Camera Parameter Restoration in Outdoor Environments
Nakagawa Masafumi, Kawai Yoshihiro, and Tomita Fumiaki

Tuesday 2nd December 2008

- Self-Calibrating Cameras Using Semidefinite Programming
Chunhua Shen, Hongdong Li, and Michael J. Brooks

Wednesday 3rd December 2008

Oral Session 8 – Medical Imaging

10:00 am – 10:40 am

- Automatic Detection of Pre-ocular Tear Film Break-Up Sequence in Dry Eyes
Tamir Yedidya, Richard Hartley, and Jean-Pierre Guillon
- Patient-Specific Customization of a Generic Femur Model Using Orthogonal 2D Radiographs
P. Gamage, S.Q. Xie, P. Delmas, P. Xu, and S. Mukherjee

Oral Session 9 – Applications

11:00 am – 12:20 pm

- Application of the Particle Filter to Tracking of Fish in Aquaculture Research
Tomasz Pinkiewicz, Ray Williams, and John Purser
- Real-Time Vision-Based Stop Sign Detection System on FPGA
Tam Phuong Cao and Guang Deng
- Using Skeletonization and Shortest Skeleton Path Approach for Chinese Character Representation
Jing-Hong Low, Chee-Onn Wong, Kirak Kim, Keechul Jung, Eunjung Han, and Hwangkyu Yang

Wednesday 3rd December 2008

- Development of a Vision-Based Driver Assistance System with Lane Departure Warning and Forward Collision Warning Functions

Jing-Fu Liu, Yi-Feng Su, Ming-Kuan Ko, and Pen-Ning Yu

Oral Session 10 – Coding

1:20 pm – 2:40 pm

- Speeding-Up Fractal Colored Image Compression Using Moments Features
Eman A. Al-Hilo and Loay E. George
- Robust Motion Estimation for Camcorders Mounted in Mobile Platforms
Jinhai Cai and Rodney Walker
- Two Applications of Graph-Cuts to Image Processing
Tristrom Cooke
- Compressing Video for Networks - Optimized Coding in Resilient Framework
Moyuresh Biswas, Michael R. Frater, John F. Arnold, and Mark R. Pickering

Poster Session 3 – Pattern Recognition

2:40 pm – 4:00 pm

- Spatio-temporal Whitening of Imaging Sensor Data Streams Using Three-Dimensional Linear Prediction
Hugh L. Kennedy

Wednesday 3rd December 2008

- Digital Image Retrieval Using Intermediate Semantic Features and Multistep Search
Dengsheng Zhang, Ying Liu, and Jin Hou
- Color Image Segmentation Using Multilevel Clustering Approach
Amina Asghar and Naveed Iqbal Rao
- Spherical Diffusion for Scale-Invariant Keypoint Detection in Wide-Angle Images
Peter Hansen, Wageeh Boles, and Peter Corke
- A Real-Time Adaptive Learning Method for Driver Eye Detection
Guangyuan Zhang, Bo Cheng, Ruijia Feng, and Xibo Zhang
- Boosting the Minimum Margin: LPBoost vs. AdaBoost
Hanxi Li and Chunhua Shen
- A Scheme for Enhancing Security Using Multiple Fingerprints and the Fuzzy Vault
Marianne Hirschbichler, Colin Boyd, and Wageeh Boles
- Object Image Retrieval in Deformable Shapes Using Morphological Operations Based on Dominant Color Regions
Thi Thi Zin, Hiromitsu Hama, and Pyke Tin
- Ranking System for Image Database Using Special Type of Markov Chain
Hiromitsu Hama, Thi Thi Zin, and Pyke Tin

Wednesday 3rd December 2008

- Graph Cuts-Based Automatic Color Image Segmentation
Anjin Park, Jungwhan Kim, Seungki Min, Sungju Yun, and Keechul Jung
- Analysis of the Effect of Different Features' Performance on Hidden Markov Modeling Based Online and Offline Signature Verification Systems
Asma Shakil, Sharifah Mumtazah Syed Ahmad, Rina Bt. Md. Anwar, and Mustafa Agil Muhamad Balbed
- Region Matching in Free-Form Surfaces Using Self Organizing Maps
Alexander D. MacLennan and Geoff A.W. West
- Improved Data Structures for Fast Region Merging Segmentation Using a Mumford-Shah Energy Functional
David J. Crisp
- Content-Based Image Retrieval via Subspace-Projected Salient Features
Jyun-Hao Huang, Ali Zia, Jun Zhou, and Antonio Robles-Kelly
- Object Detection Using a Cascade of Classifiers
Nayyar A. Zaidi and David Suter
- Detecting Uncommon Trajectories
Arnold Wiliem, Vamsi Madasu, Wageeh Boles, and Prasad Yarlagadda

Wednesday 3rd December 2008

Oral Session 11 – DICTA - ACRA Joint
Session

4:00 pm – 5:20 pm

- Development of a Hemispherical Compound Eye for Egomotion Estimation¹
Will Maddern, Gordon Wyeth
- Subspace Analysis Methods plus Motion History Image for Human Action Recognition²
Chunhua Du, Qiang Wu, Jie Yang, Xiangjian He, and Yan Chen
- An Automated Colour Calibration System using Multivariate Gaussian Mixtures to Segment HSI Colour Space¹
Naomi Henderson, Robert King, Stephan Chalup
- Object Detection Using Multi-local Feature Manifolds²
Oscar Danielsson, Stefan Carlsson, and Josephine Sullivan

¹ ACRA Paper

² DICTA Paper

