Third Canadian Conference on Computer and Robot Vision 2006

Program and Table of Contents

Wednesday, June 7th

8:30-8:40: Opening

- Introductionary comments by Chairs Ioannis Rekleitis and Greg Mori
- Conference Information

8:40-9:20 Learning and Recognition I

- 201: **Autonomous Learning of Object Appearances using Colour Contour Frames**
  Per-Erik Forssen, Anders Moe

  236: **Local Feature Matching for Face Recognition**
  Ehsan Fazl Ersi, John S. Zelek

9:20-10:20 Robotics I

- 130: **Graph Cut based Panoramic 3D Modeling and Ground Truth Comparison with a Mobile Platform - The Wägele**
  Sven Fleck, Florian Busch, Peter Biber, Wolfgang Strasser

- 136: **Colour-Gradient Redundancy for Real-time Spatial Pose Tracking in Autonomous Robot Navigation**
  Hans de Ruiter, Beno Benhabib

- 250: **Urban Position Estimation from One Dimensional Visual Cues**
  Derek Johns and Gregory Dudek

10:20-10:40 Coffee break.

10:40-11:00 Robotics I (cont'd)

- 242: **Design and analysis of a framework for real-time vision-based SLAM using Rao-Blackwellised particle filters**
  Robert Sim, Pantelis Elinas, Matt Griffin, Alex Shyr and James J. Little

11:00-12:00 Invited Speaker

John Leonard, MIT

12:00-1:30 Lunch Break

1:30-3:30 Segmentation

- 168: **IMAGE THRESHOLDING USING ANT COLONY OPTIMIZATION**
  Alice R. Malisia, Hamid R. Tizhoosh

- 173: **Evaluation of Colour Image Segmentation Hierarchies**
  Darren MacDonald, Jochen Lang and Michael McAllister

- 200: **Semiautomatic Segmentation with Compact Shape Prior**
  Piali Das, Olga Veksler, Vyacheslav Zavadsky, Yuri Boykov

- 215: **Pseudo-convex contour criterion for hierarchical segmentation of SAR images**
  Jean-Marie Beaulieu

- 218: **Hierarchical Region Mean-Based Image Segmentation**
  Slawo Wesolkowski and Paul Fieguth

- 225: **Robust Image Segmentation using Local Median**
  Jundong Liu

3:30-5:30 Poster Session I

5:30-7:00 Cocktail Rececption

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Thursday, June 8th

8:40-9:20 Stereo I

- 147: **Reflection Stereo -- Novel Monocular Stereo using a Transparent Plate**
  Masao Shimizu and Masatoshi Okutomi

- 154: **Stereo Retinex**
  Weihua Xiong, Brian Funt

9:20-10:20 Invited Speaker

Jana Kosecka, George Mason University

10:20-10:40 Coffee Break

10:40-12:00 Motion Analysis

- 214: **Using 3D Spline Differentiation to Compute Quantitative Flow**
  John Barron, Marc Daniel, Jean-Luc Mari

- 231: **Robust SSD tracking with incremental 3D structure estimation**
  Adam Rachmielowski, Dana Cobzas, Martin Jagersand

- 233: **Confidence Based updation of Motion Conspicuity in Dynamic Scenes**
  Subhransu Maji, Amitabha Mukerjee, Vivek Kumar Singh

- 128: **A GPU-based Algorithm for Estimating 3D Geometry and Motion in Near Real-time**
  Minglun Gong

12:00-1:30 Lunch Break

1:30-1:50 Camera Calibration

- 184: **Error Analysis of Camera Parameter Estimation based on Collinear Features**
  Onay Urfalioglu, Thorsten Thormaehlen, Hellward Broszio and Patrick Mikulastik

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1:50-2:50 Virtual Reality

- 188: **Toward a Realistic Interpretation of Blue-spill for Blue-screen Matting**
  Jonathan Dupont and Francois Deschenes

- 190: **Integrating animated pedagogical agent as motivational supporter into interactive system**
  P. Ravindra De Silva, Ajith. P. Madurapperuma, Ashu Marasinghe, Minetada Osano

- 248: **Avatar: a virtual reality based tool for collaborative production of theater shows**
  Christian Dompierre and Denis Laurendeau

2:50-3:10 Coffee Break

3:10-4:30 Special Session: First International Workshop on Video Processing for Security (VP4S-06)

- **A Pixel-Weighting Method for Discriminating Objects of Different Sizes in an Image Captured from a Single Camera**
  Mookyung Park, Namsu Moon, Sang Rim Ryu, Jeong Pyo Kong, Y.J. Lee, W.J. Mun

- **A Novel Clustering-Based Method for Adaptive Background Segmentation**
  S. Indupalli, M.A. Ali, Dr. B. Boufama

- **Object detection and tracking using iterative division and correlograms**
  Rafik Bourezak and Guillaume-Alexandre Bilodeau

- **Collaborative Multi-Camera Surveillance with Automated Person Detection**
  Trevor Ahmedali and James J. Clark

4:30-4:50 Coffee Break

4:50-5:50 Special Session: First International Workshop on Video Processing for Security (VP4S-06) (cont.)

- **A Multiple-Sensor Indoor Surveillance System**
  Valery A. Petrushin, Omer Shakil, Damian Roqueiro, Gang Wei, Anatole V. Gershman

- **3D Face Reconstruction from Stereo Video**
  Unsang Park, Anil K. Jain

- **User Authentication based on Face Recognition with Support Vector**

Machines
Paolo Abeni, Madalina Baltatu, Rosalia D'Alessandro

<u>5:30-6:45 CIPPRS/ACTIRF meeting</u>

<u>7:00-9:00 Conference Banquet</u>

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Friday, June 9th

8:40-9:40 Image and Video Retrieval

- 165: **Interpreting Camera Operations in the Context of Content-based Video Indexing and Retrieval**
    Wei Pan and Francois Deschenes

- 203: **Toward an Application of Content-Based Video Indexing to Computer-Assisted Descriptive Video**
    L. Gagnon, S. Foucher, F. Laliberte, M. Lalonde, M. Beaulieu

- 243: **Automatic Classification of Outdoor Images by Region Matching**
    Oliver Matias van Kaick and Greg Mori

9:40-10:20 Stereo II

- 170: **Photometric Stereo with Nearby Planar Distributed Illuminants**
    James J. Clark

- 235: **Sparse Disparity Map from Uncalibrated Infrared Stereo Images**
    Kiana Hajebi, John S. Zelek

10:20-10:40 Coffee Break

10:40-11:00 Stereo II (cont.)

- 240: **Photo Hull Regularized Stereo**
    Shufei Fan, Frank Ferrie

11:00-12:00 Robotics II

- 169: **Determining Shot Accuracy of a Robotic Pool System**
    Joseph Lam, Fei Long, Gerhard Roth, Michael Greenspan

- 222: **Underwater 3D mapping: Experiences and Lessons learned**
    Andrew Hogue, Andrew German, James Zacher, Michael Jenkin

- 228: **Local Safety Maps for a Wheelchair Robot using Vision and Lasers**
    Aniket Murarka, Joseph Modayil, Benjamin Kuipers

12:00-1:30 Lunch Break

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Yann LeCun, New York University

2:30-3:50 Learning and Recognition II

- 139: **Learning to classify by ongoing feature selection**
    Dan Levi, Shimon Ullman

- 149: **Generic Detection of Multi-Part Objects by High-Level Analysis**
    Jean-Francois Bernier and Robert Bergevin

- 230: **Automated Detection of Unusual Events on Stairs**
    Jasper Snoek, Jesse Hoey, Liam Stewart, Richard Zemel

- 238: **Simultaneous Tracking and Action Recognition using the PCA-HOG Descriptor**
    Wei-Lwun Lu and James J. Little

3:50-5:50 Poster Session II

3:50-5:50 VP4S-06 Workshop Poster/Demo Session

Poster Session I: Wednesday June 7, 3:30-5:30

- 137: **An Information-Theoretic Approach to Georegistration of Digital Elevation Maps**
  Miguel Aguilera and A. Ben Hamza
- 138: **An Enhanced Positioning Algorithm for a Self-Referencing Hand-Held 3D Sensor**
  Richard Khoury
- 157: **An Iterative Super-Resolution Reconstruction of Image Sequences using a Bayesian Approach with BTV prior and Affine Block-Based Registration**
  V. Patanaviji and S. Jitapunkul
- 163: **Simple Software for Microarray Image Analysis**
  Chaur-Chin Chen, Cheng-Yan Kao, Chun-Fan Chang, Hsueh-Ting Chu, Chiung-Nien, Chen
- 171: **McGill Object Detection Suite**
  D. H. Parks and M. D. Levine
- 193: **Disparity Map Estimation Using a Total Variation Bound**
  Wided Miled, Jean Christophe Pesquet and Michel Parent
- 199: **An Edge Preserving Locally Adaptive Anti-aliasing Zooming Algorithm with Diffused Interpolation**
  Munib Arshad
- 202: **Tracking 3D free form object in video sequence**
  D. Merad and J.Y Didier and M. Scuturici
- 204: **Expert Knowledge Based Automatic Region-of-Interest (ROI) Selection in Scanned Documents for Digital Image Encryption**
  Alexander Wong and William Bishop
- 207: **Image Inpainting and Segmentation using Hierarchical Level Set Method**
  Xiaojun Du, Dongwook Cho, Tien D. Bui
- 213: **Object Boundary Detection in Ultrasound Images**
  M.H.Yap, E.A.Edirisinghe, H.E.Bez
- 216: **Handling Occlusions in Real-time Augmented Reality : Dealing with Movable Real and Virtual Objects**
  Pierre-Alexandre Fortin and Patrick Hebert
- 221: **The Nomad 200 and the Nomad SuperScout: Reverse engineered and resurrected**
  Arjun Chopra, Mark Obsniuk, Michael R. Jenkin
- 223: **SHAPE-BASED OBJECT SEGMENTATION WITH SIMULTANEOUS INTENSITY ADJUSTMENT**
  Sarawut Tae-O-Sot, Supatana Auethavekiat,Somchai Jitapunkul
- 227: **ROBUST PREPROCESSING ALGORITHM FOR FACE RECOGNITION**
  Gaurav Mittal   Sreela Sasi,
- 237: **Using Normalized Interest Point Trajectories Over Scale For Image Search**
  Mark Fiala
- 245: **A feature-based tracking algorithm for vehicles in intersections**
  Nicolas Saunier, Tarek Sayed
- 249: **Image Classification and Retrieval using Correlation**
  Imran Ahmad and Muhammad Talal Ibrahim

Poster Session II: Friday June 9, 3:30-5:30

- 132: **3D Terrain Modeling for Rover Localization and Navigation**
  Joseph Nsasi Bakambu, Pierre Allard, Erick Dupuis
- 151: **Use of Spatial Reference Systems in Interactive Object Recognition**
  Rahmadi Kurnia, Md. Altab Hossain, and Yoshinori Kuno
- 152: **Detection and Tracking of Pianist Hands and Fingers**
  Dmitry Gorodnichy and Arjun Yogeswaran
- 167: **An Efficient Match-based Duplication Detection Algorithm**
  Aaron Langille, Minglun Gong
- 186: **Extracting and tracking Colon's "Pattern" from Colonoscopic Images**
  HanËne Chettaoui, Guillaume Thomann, Chokri Ben Amar, Tanneguy Redarce
- 192: **Local Stereo Matching with Segmentation-based Outlier Rejection**
  Mark Gerrits and Philippe Bekaert
- 197: **Single landmark based self-localization of mobile robots**
  Abdul Bais, Robert Sablatnig, Jason Gu
- 198: **Autonomous fish tracking by ROV using Monocular Camera**
  Jun Zhou and Christopher M. Clark
- 206: **Line Extraction with Composite Background Subtraction**
  H. Deng, X. Tian, K. Yamazaki, M. Mori
- 209: **Epipolar Geometry for the Rectification of Cubic Panoramas**
  Florian Kangni and Robert Laganiere
- 211: **Stability Improvement of Vision Algorithms**
  K. Shahid, G Okouneva, D. McTavish, J. Karpynczyk
- 234: **Comparison of Super-Resolution Algorithms Using Image Quality Measures**
  Isabelle BÈgin, Frank P. Ferrie
- 217: **Object Extraction and Reconstruction in Active Video**
  Ye Lu and Ze-Nian Li
- 219: **Accurate Photometric Stereo Using Four Surface Normal Approximations**
  Osamu Ikeda
- 224: **Evolving a Vision-Based Line-Following Robot Controller**
  Jean-Francois Dupuis and Marc Parizeau
- 226: **Belief Propagation on the GPU for Stereo Vision**
  Alan Brunton, Chang Shu, Gerhard Roth
- 241: **Expression-Invariant Face Recognition with Expression Classification**
  Xiaoxing Li, Greg Mori and Hao Zhang

VP4S-06 Workshop Poster/Demo Session: June 9, 3:50-5:50

- **Surveillance Video for Biometrics and Person Identification: Applicability and Applications.**
    Dmitry O. Gorodnichy (NRC-IIT)
- **Tracking Multiple People for Video Surveillance**
    M. A. Ali, S. Indupalli and B. Boufama (University of Windsor)
- **Region Competition for Object Tracking by Using Kullback-Leibler Distance and Level Set Contours**
    Mohand Said Allili and Djemel Ziou (Universite de Sherbrooke)
- **Detection of Moving Objects in Video Scene - MPEG like Motion Vector vs. Optical Flow**
    Kunio Takaya (University of Saskatchewan)
- **Sequence Based Face Characterization Using Factorized Feature Points**
    Xiaozhou Wei and Lijun Yin (SUNY Binghamton)
- **A.C.E. Surveillance - a new generation of video surveillance tools for automated recognition and management of the surveillance video data flow.**
    Dmitry O. Gorodnichy (NRC-IIT)
- **Video-Surveillance application with Self-Organizing Maps**
    Mohamed Dahmane and Jean Meunier (Universite de Montreal)
- **Fall Detection Using 3D Head Trajectory Extracted From a Single Camera Video Sequence.**
    Caroline Rougier and Jean Meunier (Universite de Montreal)
- **Detection of Medication Intake**
    Myriam Valin and Jean Meunier (Biomedical Engineering Institute, Universite de Montreal)
- **A Semi-Blind Watermarking Scheme for Color Images Using a Tree Structure and**
    Ersin Elbasi and Ahmet Eskicioglu (CUNY New York)
- **Naive Bayes Approach for watermarking in wavelet domain.**
    Ersin Elbasi and Ahmet Eskicioglu (CUNY New York)