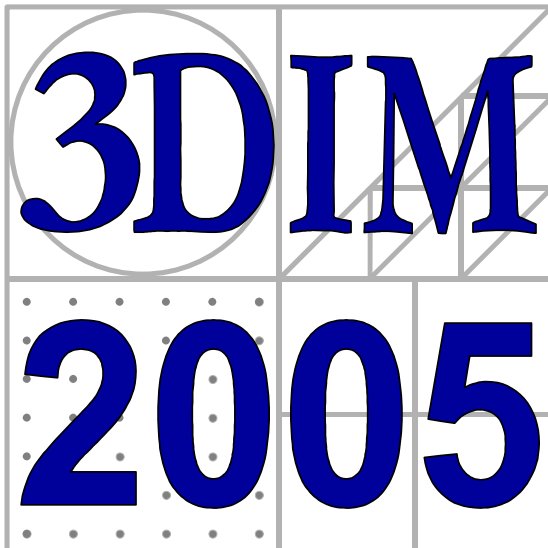


The Fifth International Conference on

3D Digital Imaging and Modeling

June 13-16, 2005
Château Laurier Hotel
Ottawa, Ontario, Canada

Final Program



<http://www.3DIMconference.org>

Monday

June 13, 2005

09:00-09:10 **Opening remarks**

09:10-10:00 **3D Imaging 1**

Chair: Marc Pollefeys

A Light Modulation/Demodulation Method for Real-Time 3D Imaging - Q. Chen and T. Wada

A MRF Formulation for Coded Structured Light - J.-P. Tardif and S. Roy

10:00-10:30 **Break**

10:30-11:45 **Modeling 1**

Chair: Patrick Flynn

Partial Surface Integration Based on Variational Implicit Functions and Surfaces for 3D Model Building - P. Claes, D. Vandermeulen, L. Van Gool, and P. Suetens

Multiresolution Interactive Modeling with Efficient Visualization - J.-D. Deschênes, P. Hébert, P. Lambert, J.-N. Ouellet, and D. Tubic

Multisensor Fusion for Volumetric Reconstruction of Large Outdoor Areas - M. Fiocco, G. Boström, J.G.M. Gonçalves, and V. Sequeira

12:00-13:00 **Lunch** (included, Laurier Room)

13:00-14:15 **Recognition**

Chair: Pierre Boulanger

Unsupervised 3D Object Recognition and Reconstruction in Unordered Datasets - M. Brown and D. G. Lowe

Automatic Class Selection and Prototyping for 3-D Object Classification - R. Donamukkala, D. Huber, A. Kapuria, and M. Hebert

3-D Vision Technology for Occupant Detection and Classification - P.R. Rao Devarakota, B. Mirbach, M. Castillo-Franco, and B. Ottersten

14:15-15:00 **Poster Session 1**
(short oral presentations)

Digitizing Archaeological Excavations from Multiple Views - X. Zabulis, A. Patterson, and K. Daniilidis

An Improved Calibration Technique for Coupled Single-Row Telemeter and CCD Camera - R. Dupont, R. Keriven, and P. Fuchs

Incremental Catmull-Clark Subdivision - H.-R. Pakdel and F. Samavati

Fitting of 3D Circles and Ellipses Using a Parameter Decomposition Approach - X. Jiang and D.-C. Cheng

An Efficient Scattered Data Approximation Using Multilevel B-Splines Based on Quasi-interpolants - B.-G. Lee, J.J. Lee, and J. Yoo

Coordination of Appearance and Motion Data for Virtual View Generation of Traditional Dances - Y. Kamon, R. Yamane, Y. Mukaigawa, and T. Shakunaga

A Mechanism for Range Image Integration without Image Registration - L. Zagorchev and A. Goshtasby

Virtual Clay Modeling System Using Multi-viewpoint Images - E. Ueda, Y. Matsumoto, and T. Ogasawara

Spatio-temporal Fusion of Multiple View Video Rate 3D Surfaces - G. Collins and A. Hilton

3D Models from Extended Uncalibrated Video Sequences: Addressing Key-Frame Selection and Projective Drift - J. Repko and M. Pollefeys

Detecting Cylinders in 3D Range Data Using Model Selection Criteria - N. Gheissari and A. Bab-Hadiashar

Fast Alignment of 3D Geometrical Models and 2D Color Images Using 2D Distance Maps - Y. Iwashita, R. Kurazume, T. Hasegawa, and K. Hara

Evaluating Collinearity Constraint for Automatic Range Image Registration - Y. Liu, L. Li, and B. Wei

Registration of Multiple Range Scans as a Location Recognition Problem: Hypothesis Generation, Refinement and Verification - B.J. King, T. Malisiewicz, C.V. Stewart, and R.J. Radke

Transform-Based Methods for Indexing and Retrieval of 3D Objects - H. Dutağaci, B. Sankur, and Y. Yemez

A Flexible 3D Modeling System Based on Combining Shape-from-Silhouette with Light-Sectioning Algorithm - T. Terauchi, Y. Oue, and K. Fujimura

A Complete U-V-Disparity Study for Stereovision Based 3D Driving Environment Analysis - Z. Hu, F. Lamosa, and K. Uchimura

Automatic Burr Detection on Surfaces of Revolution Based on Adaptive 3D Scanning - K. Claes, T.P. Koninckx, and H. Bruyninckx

15:00-15:30 **Break**

15:30-17:00 **Poster Session 1 (display)**

17:00-18:00 **Reception** (Laurier Room)

Tuesday

June 14, 2005

08:15-08:20 **Announcements**

08:20-09:10 **Invited Speaker:**

François Blais

(National Research Council, Canada):

3D Sensor Development: Past, Current and Future Trends

09:10-10:00 **Camera Techniques**

Chair: Sébastien Roy

Euclidean Reconstruction from Translational Motion Using Multiple Cameras - P. Hammarstedt and A. Heyden

Contour Point Tracking by Enforcement of Rigidity Constraints - R. Oliveira, J. Costeira, and J. Xavier

10:00-10:30 **Break**

10:30-11:45 **Registration 1**

Chair: Peter Allen

Semi-automatic Range to Range Registration: A Feature-Based Method - C. Chao and I. Stamos

3D Registration by Textured Spin-Images - N. Brusco, M. Andreetto, A. Giorgi, and G.M. Cortelazzo

A Robust Image-Based Method for 3D Registration - T. Li

12:00-13:00 **Lunch** (included, Laurier Room)

13:20-15:00 **Rendering and Appearance**

Chair: Holly Rushmeier

Real-Time Image Based Rendering from Uncalibrated Images - G. Willems, F. Verbiest, M. Vergauwen, and L. Van Gool

Correction of Color Information of a 3D Model Using a Range Intensity Image - K. Umeda, M. Shinozaki, G. Godin, and M. Rioux

Hierarchical Coarse to Fine Depth Estimation for Realistic View Interpolation - I. Geys and L. Van Gool

Relighting Acquired Models of Outdoor Scenes - A. Troccoli and P.K. Allen

15:00-15:30 **Break**

15:30-17:10 3D Imaging 2

Chair: Marc Rioux

Uncalibrated Multiple Image Stereo System with Arbitrarily Movable Camera and Projector for Wide Range Scanning - R. Furukawa and H. Kawasaki

Accuracy of 3D Scanning Technologies in a Face Scanning Scenario - C. Boehnen and P. Flynn

Capturing 2½D Depth and Texture of Time-Varying Scenes Using Structured Infrared Light - C. Frueh and A. Zakhor

Efficient Photometric Stereo Technique for Three-Dimensional Surfaces with Unknown BRDF - L. Shen, T. Machida, and H. Takemura

17:30-21:00 Reception and Conference Banquet (Adam Room)

Wednesday June 15, 2005

08:15-08:20 Announcements

08:20-09:10 Invited Speaker:

Kenichi Kanatani

(Okayama University, Japan):

Further Improving Geometric Fitting

09:10-10:00 Human Modeling

Chair: Charles Stewart

Extracting Main Modes of Human Body Shape Variation from 3-D Anthropometric Data - Z. Ben Azouz, C. Shu, R. Lepage, and M. Rioux

From Range Data to Animated Anatomy-Based Faces: A Model Adaptation Method - Y. Zhang, T. Sim, and C. L. Tan

10:00-10:30 Break

10:30-11:45 Geometric Signal Processing

Chair: Takeshi Masuda

Hierarchical Segmentation of Range Images with Contour Constraints - P. Boulanger, G. Osorio, and F. Prieto

Scale Selection for Classification of Point-Sampled 3-D Surfaces - J.-F. Lalonde, R. Unnikrishnan, N. Vandapel, and M. Hebert

Accurate Principal Directions Estimation in Discrete Surfaces - G. Agam and X. Tang

12:00-13:00 Lunch (included, Laurier Room)

13:00-14:15 Registration 2

Chair: Patrick Hébert

Simultaneous Determination of Registration and Deformation Parameters among 3D Range Images - T. Masuda, Y. Hirota, K. Ikeuchi, and K. Nishino

Globally Convergent Range Image Registration by Graph Kernel Algorithm - R. Šára, I. S. Okatani, and A. Sugimoto

Robust and Accurate Partial Surface Registration Based on Variational Implicit Surfaces for Automatic 3D Model Building - P. Claes, D. Vandermeulen, L. Van Gool, and P. Suetens

14:15-15:00 Poster Session 2 (short oral presentations)

Bayesian Modelling of Camera Calibration and Reconstruction - R. Sundareswara and P. R. Schrater

Toward a Near Optimal Quad/Triangle Subdivision Surface Fitting - G. Lavoue, F. Dupont, and A. Baskurt

Identifying the Interface between Two Sand Materials - A. Kaestner, P. Lehmann, and H. Fluehler

A Contour-Based Approach to 3D Text Labeling on Triangulated Surfaces - G. Slabaugh, V. Mihalef, and G. Unal

Shape Reconstruction of Human Foot from Multi-camera Images Based on PCA of Human Shape Database - J. Wang, H. Saito, M. Kimura, M. Mochimaru, and T. Kanade

Realistic Human Head Modeling with Multi-view Hairstyle Reconstruction - X. Li and H. Zha

Determining Characteristic Views of a 3D Object by Visual Hulls and Hausdorff Distance - A. Theetten, J.-P. Vandeborre, and M. Daoudi

3D Modeling of Outdoor Environments by Integrating Omnidirectional Range and Color Images - T. Asai, M. Kanbara, and N. Yokoya

Acquisition of View-Based 3-D Object Models Using Supervised, Unstructured Data - K. Coogan and I. Green

The Planar: A Mobile VR Tool with Pragmatic Pose Estimation for Generation and Manipulation of 3D Data in Industrial Environments - R. Schoenfelder, J. Baur, and F. Spenling

Automatic Registration of Range Images Based on Correspondence of Complete Plane Patches - W. He, W. Ma, and H. Zha

Fast Simultaneous Alignment of Multiple Range Images Using Index Images - T. Oishi, A. Nakazawa, R. Kurazume, and K. Ikeuchi

Projection-Based Registration Using a Multi-view Camera for Indoor Scene Reconstruction - S. Kim and W. Woo

Efficient Discovery Service for a Digital Library of 3D Models - H. Anan, K. Maly, and M. Zubair

Micro-stereoscopic Vision System for the Determination of Air Bubbles and Aqueous Droplets Content within Oil Drops in Simulated Processes of Multiphase Fermentations - J. B. Brière, M. S. Córdova, E. Galindo, and G. Corkidi

Stereo by Multiperspective Imaging under 6 DOF Camera Motion - N. Ichimura

Bootstrapped Real-Time Ego Motion Estimation and Scene Modeling - X. Zhang and Y. Genc

15:00-15:30 Break

15:30-17:00 Poster Session 2 (display)

17:00-18:00 Reception (Laurier Room)

Thursday June 16, 2005

08:15-08:20 Announcements

08:20-10:00 Modeling 2

Chair: François Blais

3D Digitization of a Large Model of Imperial Rome - G. Guidi, L. Micoli, M. Russo, B. Frischer, M. De Simone, A. Spinetti, and L. Carosso

Non-parametric 3D Surface Completion - T. P. Breckon and R. B. Fisher

Multi-resolution Modeling and Locally Refined Collision Detection for Haptic Interaction - P. Liu, X. Shen, N. Georganas, and G. Roth

An Adaptive Dandelion Model for Reconstructing Spherical Terrain-Like Visual Hull Surfaces - X. Liu, H. Yao and W. Gao

10:00-10:30 Break

10:30-11:45 Stereo

Chair: Kenichi Kanatani

Fast Multiple-Baseline Stereo with Occlusion - M.-A. Drouin, M. Trudeau, and S. Roy

Image-Gradient-Guided Real-Time Stereo on Graphics Hardware - M. Gong and R. Yang

Gaussian Scale-Space Dense Disparity Estimation with Anisotropic Disparity-Field Diffusion - J. Kim and T. Sikora

12:00-13:00 Lunch (included, Laurier Room)

13:00-13:50 Registration 3

Chair: Lars Nyland

Discrete Pose Space Estimation to Improve ICP-Based Tracking - L. Shang, P. Jasiobedzki, and M. Greenspan

Projective Surface Matching of Colored 3D Scans - K. Pulli, S. Piironen, T. Duchamp, and W. Stuetzle

13:50-14:00 Closing remarks

14:15-17:00 Visit to NRC's Labs

Laboratory visit to the National Research Council's Visual Information Technology Group: demonstrations of research work in 3D imaging, modeling and visualization. PLEASE NOTE THAT PREREGISTRATION IS REQUIRED FOR THIS EVENT, AND THAT THE NUMBER OF VISITORS IS LIMITED. Please see the Conference Registration Desk for further information. Bus transportation will be provided to the facility and back at the Château Laurier Hotel. *This visit is organized by NRC.*

Thank you for participating to

3DIM2005

Next 3DIM Conference: *spring 2007*

Consult the web site for updated details:

<http://www.3DIMconference.org>