

第2回コンピュータビジョン国際会議 (ICCV88) 会議報告

Second International Conference on Computer Vision

坂上勝彦 (電総研) 尺長 健 (NTT) 高橋裕信 (三洋電機) 小泉正彦 (松下電器) 白井良明 (大阪大学)

第2回ICCVは、昨年12月5日から8日までの4日間、米国フロリダ州タンパにあるInnisbrookというリゾートホテルを会場として行われた。コンファレンスチェアマンは、Prof. Ruzena Bajcsy (Univ. of Pennsylvania)と Prof. Shimon Ullman (MIT)の2人である。本会議は隔年で開催される「Computer Vision」のためだけの国際会議であり、第1回は、87年6月にロンドンで開催されている。

発表論文数は、ロングペーパー35、ショートペーパー55であった。表1に first author による国別発表件数を示す。投稿は24カ国から309件あり、very competitiveな選出作業であったとのことである。査読は論文を匿名にし、3人の査読者によって行われたようである。参加者は、約260名 (無料入場者を含めると約300名)であった。

研究発表に先立ち Marr prize受賞者が発表された。今回の受賞者は以下の通りである。

- 大賞: - B.V.Funt and J.Ho (Simon Fraser Univ.)
Session (1)
佳作: - V.S.Nalwa (AT&T Bell Lab.) Session (2)
- A.Yuille (Harvard Univ.) and
N.M.Grzywacz (Whitaker College)
Session (4c)
- D.G.Lowe (Univ. of British Columbia)
Session (8)

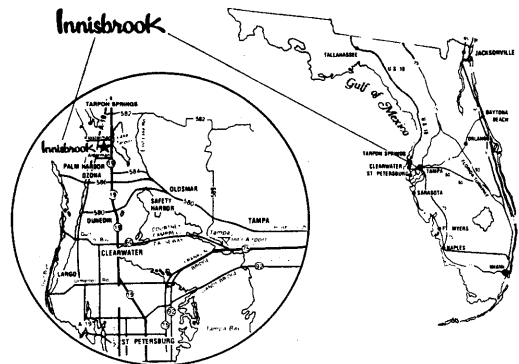
表1. 国別発表件数

	ロングペーパー	ショートペーパー	合計
アメリカ	24	37	61
カナダ	5	3	8
フランス	2	4	6
イギリス	2	2	4
日本	0	4	4
イスラエル	0	3	3
スウェーデン	1	1	2
デンマーク	1	0	1
イタリア	0	1	1
	35	55	90

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(Second International Conference on Computer Vision)
期日: 1988年12月5日~12月8日
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会議の運営としては、ロングペーパーは1会場のみで発表が行われ、ショートペーパーは2会場に別れたのバラレルセッションであった。ロングペーパーは持ち時間30分で比較的ゆったりとしていたのに対し、ショートペーパーは15分と短く、質疑討論はむしろセッション終了後に個別に行われていた。

次回 3rd ICCV については、12月5日の夜行われたIEEE Computer Society 主催の公開会議で議論された。結論として、3rd ICCVは1990年6月から10月の適当な時期に日本において開催されることが提案された。



Monday, December 5, 1988

- 9:00-10:30 Session (1): Color
Color from Black and White, Brian V. Punt and Jian Ho
A Novel Approach to Colour Constancy, D.A. Forsyth
- 11:00-12:30 Session (2): Shape
Recovering 3-D Shape Deformation by an Extended Circular Image Representation,
Efficiently Computing and Representing Aspect Graphs of Polyhedral Objects, Ziv Ogiliv,
John Camry, and Raimund Seidel
Representing Oriented Piecewise C2 Surfaces, Vishvijit Malviya
- 2:00-3:30 Session (3): Stereo
How Delaunay Triangulation can be used for Representing Stereo Data, Elizabeth Le
Braz-Melinha, M. Schmitt, O.D. Faugeras and J. Bolsoniari
Two-View Matching, Narendra Ahuja, Juyang Weng, and Thomas S. Huang
A New Model-Based Stereo Approach for 3-D Surface Reconstruction Using Contours on the
Surface Pattern, David B. Cooper
- 4:00-6:00 Parallel Sessions

- Session A
Wavelet Energy Zero-Crossing Representation,
S. Mallat
Determining the Optimal Weights in Multiple
Objective Function Optimization, M. Gennert
and F. Tomita
Detecting Corners, K. Rangarajan, M. Shah, and
D. Kim Bracke
The Three Camera Support Algorithm:
Using Dynamic Programming for Minimizing
The Energy of Active Contours in The Presence
Of Hard Constraints, A. Amin, S. Tehrani, and
F. Mokhtarian
Evolutionary Properties Of Space Curves,
F. Mokhtarian
A Morphological Algorithm for Computing Non-
Planar Point Neighborhoods on Cellular
Automata, M. Szmolick, S. Kim and R. O'Bara
- Session B
Synthetic Smooth Surface Stereo, T. Boult,
and L. Chen
Self-Calibration of Stereo Cameras, H. Takahashi
and F. Tomita
Towards Real-Time Trinocular Stereo, C. Hansen,
The Image and P. Lusten Support Algorithm:
A Three Camera Stereo Algorithm for
Overcoming Binocular Matching Errors, C.
Stewart and C.R. Dyer
Brightness-based Stereo Matching, M. Gennert
Application of Qualitative Depth and Shape
From Stereo, D. Reinshel
Stereo Matching by Changing Camera
Parameters, M. Subbarao
- Session C
Morphological Feature Detection, J.A. Noble
Conference Reception

Tuesday, December 6, 1988

- 9:00-10:30 Session (4a): Motion
Structure and Motion from Two Perspective Views Via Planar Patch, Chia-Hoang Lee
A Theory on Optical Velocity Fields and Ambiguous Motion of Curves, Fredrik Bergholm
Analysis of a Sequence of Stereo Scenes Containing Multiple Moving Objects Using Rigidity
Constraints, zhenyongzhang, D.D. Faugeras and Nicholas Alapha
- 11:00-12:30 Session (4b): Motion
Obstacle Avoidance: Towards Qualitative Vision, Randall C. Nelson and John (Yiannis) Aloimonos
Polynomial Methods for Structure from Motion, Ramesh Jain and Charles Jerian
Estimating Motion from Sparse Range Data Without Correspondence, Richard Szeliski
- 2:00-3:30 Session (5): Object Recognition
The Combinatorics of Object Recognition in Cluttered Environments Using Constrained Search,
Y. Eric C. Orinowski
The Eric C. Orinowski Generation of Object Recognition Program—Modeling Sensors, Kazushi
Keuchi and Takao Kabane
Geometric Hashing: A General and Efficient Model-Based Recognition Scheme, Haim J. Wolfson
and Yehzekiel Lamdan
- 4:00-6:00 Parallel Sessions

- Session A
On the Congruence of Noisy Images to Line
Segment Models, J. Cox and J.R. Kroski
On the Congruence of Noisy Images to Minimal
Information, G. Szoban and S. Ullman
Learnable and Non-Learnable Visual Concepts,
H. Swetscher
Image Description via the Multiresolution Axis
of Symmetry, S. Pizer and J. Gauch
The Automatic Generation of Recognition
Strategies, C. Hansen and T. Henderson
A New Approach to Object Recognition,
Pasquale M. Iannicci, S. Usher, and G.
Syrus-Labin
Occlusion-Sensitive Matching, W. Thompson
and R. Whillock
- Session B
Color Image Analysis with an Intrinsic Reflection
Model, G. Meder
On the Congruence of Noisy Images to Minimal
Information, G. Szoban and S. Ullman
Learnable and Non-Learnable Visual Concepts,
H. Swetscher
Segmenting Textured Images, P. Cohen and
H. Nguyen
An Adaptive Clustering Algorithm for Image
Segmentation, T.M. Pappas and N.S. Jayant
A New Approach to Object Recognition,
Pasquale M. Iannicci, S. Usher, and G.
Moerder
Structural Saliency: The Detection of Globally
Salient Structures Using A Locally Connected
Network, A. Shaizawa and S. Ullman
Admissibility of constraint functions in
Relaxation Processes, I. Bogun

Wednesday, December 7, 1988

- 9:00-10:30 Session (4c): Motion
Surface Reconstruction from Image Sequences, H. Harim Baker
The Motion Coherence Theory, Alan L. Yuille and Norberto M. Crzywacz
Multigrid Bayesian Estimation of Image Motion Fields Using Stochastic Relaxation, Janusz
Konrad and Eric Dubois
- 11:00-12:30 Session (4d): Motion
Orbit Acceleration, Jens Arpsang
Temporal Edges: The Detection Of Motion And The Computation Of Optical Flow, James H.
Duncker and Tsi-Chia Chou
Perceiving Structure from Motion: Failure of Shape Constancy, Jack M. Loomis and David W. Eby
- 2:00-3:30 Session (6): Recovery of Shape
Geometry from Specularities, Andrew Blake and Gavin Brelstaff
Shape Information From Shading: A Theory About Human Perception, Alex Pentland
Using Symmetries For Analysis of Shape From Contour, Farh Ullupinar and Ramakant Nevatia
- 4:00-6:00 Parallel Sessions

- Session A
Space-Time Sampling With Motion Uncertainty:
Constraints on Space-Time Filtering, R.S.
Srinivasan and The Stabilized World, D.J.
Heeger and C. Hager
Translating Optical Flow into Taken Matches
and the Recovery of Depth From Looming,
Lance Williams and Allen Hanson
Optimal Computing of Structure from Motion
From Stereo, D. Reinshel
M.E. Szepeski and J. Yarnis/Aloimonos
Parallel Optical Flow Using Local Voting, J.J.
LITTLE, H.H. Bulthoff, and T. Poggio
A Color Reflectance Model and Its use for
Segmentation and Material Classification,
Glen Healey
Recovering Image Flow by Tracking Edge-Lines,
J.L. Crowley
- Session B
Reconstruction of Surfaces of 3-D Objects by
Many Parameters Using the
Recognizing 3-D Objects Using Surface
Descriptions, T.J. Fan, C. Medioni, and R. Nevatia
The Alignment of Objects With Smooth
Surfaces, A. Basri and S. Ullman
Recognize the Similarity Between Shapes
Under Affine Transformation, J. Hong and X. Tan
An Algorithm for the Aspect Graph of
Surfaces, A. Basri and S. Ullman
Aspect Graphs and Nonlinear Optimization in
3-D Object Recognition, L. Stark, D. Eggert,
and K. Bowyer
Reconstruction of Consistent Shape From
Inconsistent Data: Optimization of 2 1/2
Sketches, Ken-ichi Kanatani

Thursday, December 8, 1988

- 9:00-10:30 Session (7): Active Vision
Modal Control of an Attentive Vision System, James J. Clark, and Nicola Ferrier
Eye Fixation and Early Vision: Kinetic Depth, Dana H. Ballard and Alcan Ozcancaari
Surface Reconstruction by Dynamic Integration of Focus, Camera Vergence, and Stereo, Lynn
Abbott and Narendra Ahuja
- 11:00-12:30 Session (8): Features
Coping with Discontinuities in Computer Vision: Their Detection, Classification and
Measurement, David Lee
The Organization of Curve Detection: Coarse Target Fields and Fine Spine Coverings, Steven
W. Zucker, Chantal David, Allan Dobbins and Lee Versson
- 2:00-3:30 Session (9): Techniques
Pyramid Implementation of Optimal Step Conjugate Search Algorithms for Some Computer
Vision Problems, Rama Chellappa and C.S. Young
Robust Window Operators, Paul J. Besi, Jeffrey B. Birch and Layne T. Watson
Image Underlying Undersampling System for Aerial Imagery Interpretation, Darwin Kuan,
Horace Sheng, Rajan Dutta and Pat Ranchi
- 4:00-6:00 Parallel Sessions

- Session A
Computational Aspects of Determining
Optical Flow, G.W. Wesitkowski, A. Papaagorgiou,
D. Lee
A Nonlinear Approach to the Motion
Correspondence Problem, Sir Poppel
Recurrent Flow Fields, S. Carlsson
Motion and Depth From Binocular Orthographic
Views, H. Chen
Robust Depth Estimation From Optical Flow,
B. Shiharay and M. Brown
The Feasibility of Motion And Structure
Correspondence, J.J. Barrott, A.D. Appson, J.K.
Toscani
- Session B
Singularities of Principal Direction Fields From
3-D Images, P. Sander and S. Zucker
Shape From Angles Under Perspective
Projection, T. Shakunaga and H. Kaneo
Matching Perspective Images Using Geometric
Features, And Perceptual Grouping, L. Quan
and S. Ullman
The Creation of Structure in Dynamic Shape,
A.L. Yuille
Error of Fit Measures for Recovering
Parametric Solids, T.E. Boult and A.D. Gross
Optimal Morphological Approaches to Image
Matching and Object Detection, P. Maragos
On the Significance of the Hough Transform For
Object Recognition, W.E. Grimson and B.P.
Huttenlocher