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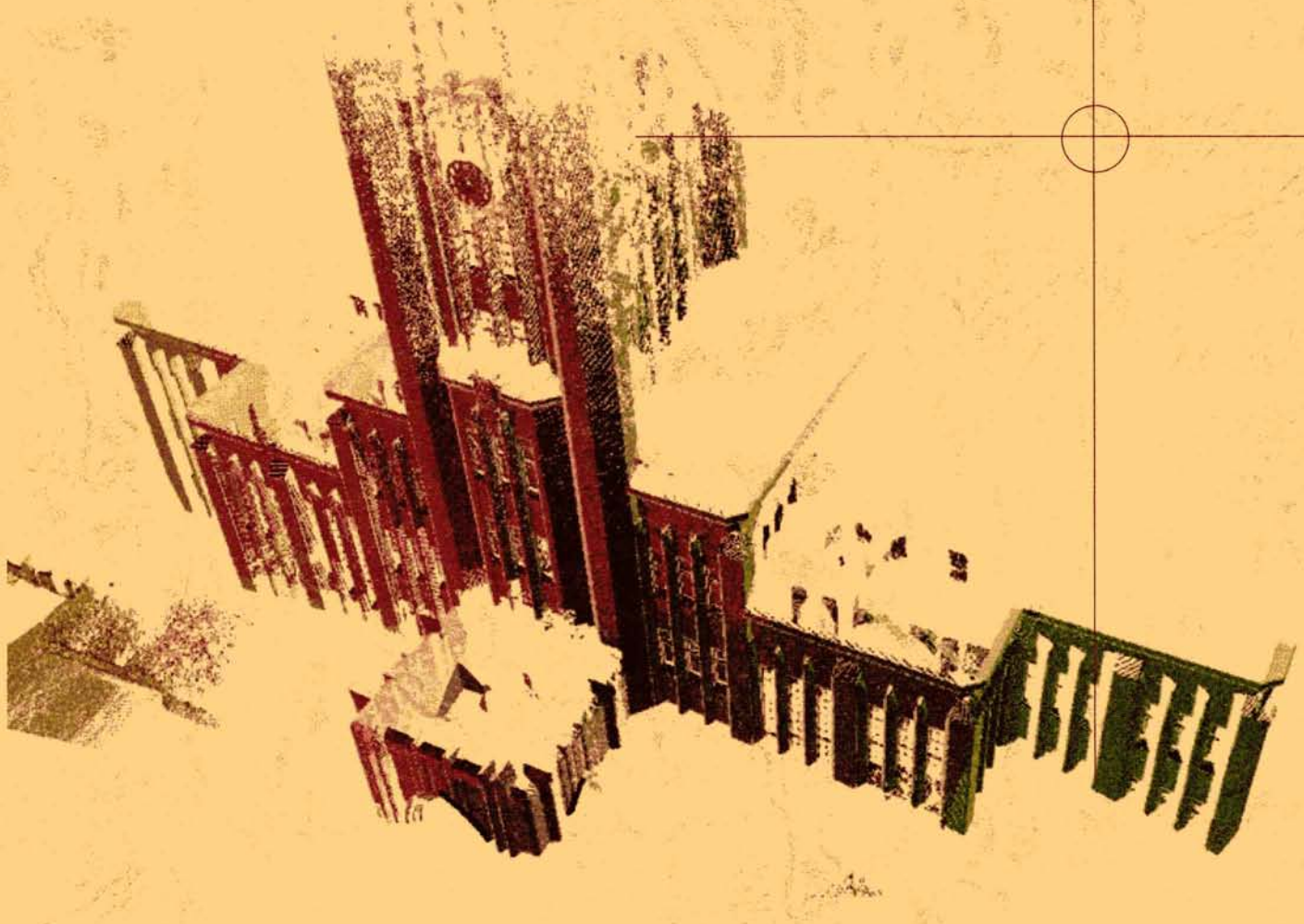

IAPR Workshop on Machine Vision Applications

Sponsored by IAPR MVA Organizing Committee
The University of Tokyo

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IAPR WORKSHOP ON MACHINE VISION APPLICATIONS

November 28 – 30, 2000

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In cooperation with

Information Processing Society of Japan
Institute of Electrical Engineers of Japan
Institute of Electronics, Information and Communication Engineers
Institute of Image Electronics Engineers of Japan
Institute of Image Information and Television Engineers
Japanese Society of Artificial Intelligence
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Message from the Workshop Chairs

It is our great pleasure to welcome all of you to IAPR's Workshop on Machine Vision Applications 2000 (IAPR MVA2000). This workshop is co-sponsored by IAPR, The University of Tokyo, and Science University of Tokyo.

This is the seventh workshop since the first one was held in Tokyo in 1988. In order to celebrate this long history of the workshop as well as the coming new millennium, we chose the flagship Yasuda auditorium of The University of Tokyo as the conference site. We also use the display of the auditorium's range data, taken with our range sensor and aligned by using our simultaneous alignment program, as the drawing on the front cover of this proceedings. Since we display the cloud of points from the top of the building, we can see a rather unusual view of the auditorium.

More than 200 extended abstracts were submitted to the workshop. From those, we have selected 41 papers for oral presentations and 107 papers for poster presentations. Unfortunately, however, some excellent papers have been left over due to the limitation of presentation slots. In addition to the submitted papers, three distinguished researchers were invited to give presentations. We thank those three outstanding speakers: Prof. Ejiri, Prof. Kak, and Prof. Ayache, for accepting our invitation.

We also continued our new tradition to select several outstanding papers, from those appeared in 1990 workshop, that we consider to be the most impact on the field of machine vision. The titles and the authors of those outstanding papers were listed on the following page of this proceedings.

Traditionally, the area of vision applications has been limited to robotics and inspection. Recently, multi-media, graphics, and human-computer interaction have emerged as new application areas. The MVA2000 workshop reflects this fact, and papers on these new application areas have drastically increased so that several sessions are devoted to multi-media, color-image analysis, and human-computer interaction applications. We hope that this workshop will enable the participants to acquire the knowledge of new activities on these research areas as well as to deepen their understanding of the traditional ones.

Organizing a workshop is a challenging job. We would like to express our gratitude to the members of the MVA Organizing Committee who have done such a superb job of making the MVA2000 workshop so successful.

Lastly we express our hearty gratitude to all participants, and we hope that this workshop will be successful and memorable one to all participants.

Welcome to MVA2000.

Mikio Takagi
Co-Chair, MVA2000
Science University of Tokyo

Katsushi Ikeuchi
Co-Chair, MVA2000
The University of Tokyo

Johji Tajima
Program Chair, MVA2000
NEC Corporation

Most Influential Paper over the Decade Award

This award is given to the authors of papers appearing in IAPR MVA'90 which have been recognized as having had the most significant influence on machine vision technology over the subsequent decade.

"A Method for the Synchronized Acquisition of Cylindrical Range and Color Data"

authored by Y.Suenaga and Y.Watanabe (NTT, JAPAN)

Abstract: This paper presents a method of 3D human face measurement using a newly developed device that acquires 3D range data and surface color data at the same time. The cylindrical range data is measured by a laser light source and a CCD sensor with a resolution of 512 vertical scan lines, 256 points per scan line. The color data is acquired as a cylindrical projection image having 512 by 256 pixels , 24 bits/pixel (8 bits each for red, green, and blue). The scanner has been successfully applied to the measurement of human faces and other 3D objects.

"Face Recognition without Features"

authored by M.Turk and A.Pentland (MIT, USA)

Abstract: We have developed a near-real-time computer system which can locate and track a subject's head, and then recognize the person by comparing characteristics of the face to those of known individuals. Our approach treats the face recognition problem as an intrinsically two-dimensional recognition problem, taking advantage of the fact that faces are normally upright and thus may be described by a small set of 2-D characteristic views. The system functions by projecting face images onto a feature space that spans the significant variations among known face images. The significant features are known as "eigenfaces", because they are the eigenvectors (principal components) of the set of faces; they do not necessarily correspond to features such as eyes, ears, and noses.

IAPR MVA Organizing Committee

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