



Proceedings of MVA 2013
IAPR International Conference on Machine Vision Applications
May 20-23, 2013
Ritsumeikan University, Kyoto, Japan

Sponsored by
MVA Organization
IAPR TC-8
Ritsumeikan University

PROCEEDINGS OF
THE THIRTEENTH IAPR INTERNATIONAL
CONFERENCE ON
MACHINE VISION APPLICATIONS

May 20-23, 2013

Ritsumeikan University, Kyoto

JAPAN

PROCEEDINGS OF THE THIRTEENTH
IAPR INTERNATIONAL CONFERENCE
ON MACHINE VISION APPLICATIONS

MVA2013

Copyright © 2013 by MVA Organization.
All rights reserved.

ISBN 978-4-901122-13-9

Copyright or reprint permissions and order of additional copies should be addressed to:

Prof. Katsushi IKEUCHI
Institute of Industrial Science
The University of Tokyo
Komaba 4-6-1, Meguro-ku
Tokyo 153-8505 JAPAN

Phone: +81-3-5452-6242 Fax: +81-3-5452-6244

Email: mva2013@mva-org.jp

Printed in Japan.

IAPR MVA2013

***IAPR INTERNATIONAL CONFERENCE
ON MACHINE VISION APPLICATIONS
MVA2013***

***May 20-23, 2013
Ritsumeikan University, Kyoto, JAPAN***

Sponsored by

MVA Organization

IAPR TC-8

Ritsumeikan University

In Cooperation with

The Information Processing Society of Japan

The Institute of Electrical Engineers of Japan

The Institute of Electronics, Information and Communication Engineers

The Institute of Image Information and Television Engineers

The Institute of Systems, Control and Information Engineers

The Institute of Image Electronics Engineers of Japan

The Japanese Society for Artificial Intelligence

The Japanese Society for Non-destructive Inspection

The Japan Society for Precision Engineering

The Robotics Society of Japan

The Society of Academic Study on Sensing via Image Information

The Society of Automotive Engineers of Japan

The Society of Instrument and Control Engineers

The Virtual Reality Society of Japan

MVA CONFERENCE COMMITTEE

General Chair

Yoichi SATO (The University of Tokyo)

Publication Co-Chairs

Eigo SEGAWA (Fujitsu)
Yasuhiro TANIGUCHI (Toshiba)

Financial Co-Chairs

Ryuzo OKADA (Toshiba)
Koji WAKIMOTO (Mitsubishi Electric)

Publicity Co-Chairs

Hiroshi ISHIKAWA (Waseda University)
Hisae SHIBUYA (Hitachi)

Web Co-Chairs

Hitoshi HABE (Kinki University)
Shunsuke KUDOH
(The University of Electro-Communications)

Program Chair

Masaki SUWA (Omron)

Award Co-Chairs

Johji TAJIMA (Nagoya City University)
Norimichi UKITA (NAIST)

Demo Co-Chairs

Kota FUJIMURA (Factory Vision Solutions)
Yoshihisa IJIRI (Omron)

Local Arrangement Chair

Norimichi UKITA (NAIST)

Local Arrangement Vice-Chairs

Takuya FUNATOMI (Kyoto University)
Fumihiisa SHIBATA (Ritsumeikan University)

Organizing Committee Members

Akihiko IKETANI (NEC)
Yoshinori KONISHI (Omron)
Shiro KUMANO (NTT)
Takeshi MASUDA (AIST)
Yoshiko MATSUURA (The University of Tokyo)
Shotaro MIWA (Mitsubishi Electric)
Kunio NOBORI (Panasonic)

Masaki ONISHI (AIST)
Ikuko SHIMIZU
(Tokyo University of Agriculture and Technology)
Noriko SHIMOMURA (Nissan)
Yusuke SUGANO (The University of Tokyo)
Norichika YUI (Advanced Communication Media)

Conference Advisory Board Members

Masakazu EJIRI (R&D consultant)
Katsushi IKEUCHI (The University of Tokyo)
Masatsugu KIDODE (NAIST)
Hideo SAITO (Keio University)
Katsuhiko SAKAUE (AIST)

Hiroshi SAKO (Hosei University)
Shigeru SASAKI (Fujitsu)
Johji TAJIMA (Nagoya City University)
Hideyuki TAMURA (Ritsumeikan University)
Keiji YAMADA (NEC)

Program Committee Members

Jake K. AGGARWAL	Mohit GUPTA	Makoto KURUMISAWA	Shin'ichi SATOH
Mitsuru AMBAI	Igor GUROV	In So KWEON	Bryan SCOTNEY
Yoshimitsu AOKI	Manabu HASHIMOTO	Chil Woo LEE	Shuji SENDA
Selim BENHIMANE	Janne HEIKKILA	Sang Wook LEE	Myriam SERVIERES
Philippe BOLON	Stefan HINTERSTOISSER	Shiying LI	Takeshi SHAKUNAGA
Pierre BOULANGER	Tin Kam HO	Baoliang LU	Shiguang SHAN
Richard BOWDEN	Ki Sang HONG	Huchuan LU	Terence SIM
Thomas BREUEL	Fuqiao HU	Lizhuang MA	Kyoko SUDO
Hans BURKHARDT	Yi-Ping HUNG	Atsuto MAKI	Kazuhiko SUMI
Aurelio CAMPILHO	Ichiro IDE	Geovanni MARTINEZ	David SUTER
Tat-Jen CHAM	Pieter JONKER	Tati R. MENGKO	Akira UTSUMI
Sharat CHANDRAN	Masataka KAGESAWA	Piotr MIROWSKI	Liang WANG
Yen-Wei CHEN	Masayuki KANBARA	Guillaume MOREAU	Mutsumi WATANABE
Chia-Yen CHEN	Hiroshi KANO	Greg MORI	Paul F. WHELAN
Xilin CHEN	Abdelaziz KHIAT	Vittorio MURINO	Simon WINKELBACH
Dmitry CHETVERIKOV	Tae-Kyun KIM	Hiroshi NAGAHASHI	Toshihiko YAMASAKI
Tae Eun CHOE	Makoto KIMURA	Hiroaki NAKAI	Takayoshi YAMASHITA
Qionghai DAI	Koichi KISE	Akio NAKAMURA	Shuicheng YAN
Franck DAVOINE	Yasuyo KITA	Yuichi NAKAMURA	Ming-Hsuan YANG
Joachim DENZLER	Itaru KITAHARA	P. J. NARAYANAN	June-Ho YI
Marco FERRETTI	Reinhard KLETTE	Heinrich NIEMANN	Pong Chi YUEN
Robert FISHER	Akio KOSAKA	Yoshiki NINOMIYA	Hongbin ZHA
Katrin FRANKE	Hiroyasu KOSHIMIZU	Munetoshi NUMADA	Huijing ZHAO
Hironobu FUJIYOSHI	Yoshinori KUNO	Kazunori ONOGUCHI	Yuming ZHAO
Guy GODIN	Ryo KURAZUME	Erik RODNER	

For further information, please contact: **MVA Organization, c/o Prof. Katsushi IKEUCHI**

Institute of Industrial Science, The University of Tokyo

Komaba 4-6-1, Meguro-ku, Tokyo 153-8505, JAPAN

Phone: +81-3-5452-6242 Fax: +81-3-5452-6244

E-mail: mva2013@mva-org.jp Website: <http://www.mva-org.jp/mva2013/>