4th International IEEE Workshop on 3D Representation and Recognition (3dRR-13)

In conjunction with **ICCV 2013**, Sydney, Australia

http://www.eecs.umich.edu/vision/3dRR13/3dRR13.html

- Deadline for paper submission: **Sept. 5th, 2013**
- **Best Paper Award Prize**: **TBA** (sponsored by TBA)
- Accepted papers will be published in **ICCV 2013 CD-ROM Proceedings**.

SCOPE:

Object categorization and scene understanding have long been a central goal of computer vision research. Changes in lighting, viewpoint, and pose, as well as intra-class differences, lead to enormous appearance variation, making the problem highly challenging. While advances in machine learning and image feature representations have led to great progress in 2D pattern recognition approaches, recent work suggests that large gains can be made by acknowledging that objects live in a physical, three-dimensional world. When modeling scenes, objects and their relations in 3D, we must answer several fundamental questions. How can we effectively learn 3D object representations from images or video? What level of supervision is required? How can we infer spatial knowledge of the scene and use it to aid in recognition? How can both depth sensors and RGB data be used to enable more descriptive representations for scenes and objects?

After the success of the 3dRR workshop during the past ICCV07, ICCV09, and ICCV11, we are pleased to organize a fourth edition of 3dRR in conjunction with ICCV 2013. This workshop would represent a great opportunity to bring together experts from multiple areas of computer vision and provide an arena for stimulating debate. We believe the complementary viewpoint offered by studies in human vision can provide additional insight on this fundamental problem. Specific questions we aim to address include:

Object Representation

- How can we find better representations of the 3D geometry of object instances or classes to further improve recognition?
- How can we use the 3D object representation as building blocks for higher-level tasks, such as scene understanding?
- How can we utilize synthetic 3D training data (CAD models) besides real images and kinect-style depth data to learn better object representations?

Kinect: Combining Depth and RGB Sensors
- How can we represent and recognize object categories using both RGB and depth sensors?
- How can we estimate scene surfaces and physical interactions?
- How can depth and RGB data help extract object functional parts and affordances?

Reconstruction and Recognition
- Can recognition and reconstruction be run simultaneously to enhance each other?
- How much does 3D information help?
- How detailed does the 3D representation need to be in order to achieve satisfactory recognition?

Spatial Inference
- How can we represent and infer the depth and orientation of surfaces and free space in indoor and outdoor scenes?
- How can alternative representations, such as depth maps and surface layout estimates, be combined to improve robustness?

Spatial constraints and contextual recognition
- How can we use/explore different degrees of 3D spatial constraints (e.g. ground plane) for recognition?
- How can 3D spatial constraints be used for joint recognition of scenes and the objects within?

Human vision
- What can we learn from what we know about our own visual system? How do we humans represent 3D objects or the 3D environment? Can this inspire computational work?

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Program chairs

· Min Sun, University of Washington
· Michael Stark, Stanford University and Max Planck Institute for Informatics
· Silvio Savarese, University of Michigan at Ann Arbor

Steering committee:

· Tinne Tuytelaars, K.U. Leuven
· Derek Hoiem, University of Illinois at Urbana-Champaign

Program committee (TBC):

- Bastian Leibe, ETHZ
- Kristen Grauman, UT Austin
- Roberto Sastre-Lopez, University of Alcala
- David Lee, CMU
- Abhinav Gupta, CMU
- Deva Ramanan, UC Irvine
- Juergen Gall, ETHZ
- Ales Leonardis, University of Ljubljana
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- Fei-Fei Li, Stanford
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- Alex Berg, Stony Brook
- Alyosha Efros, CMU
- Jamie Shotton, Microsoft
- Vittorio Ferrari, ETH
- Varsha Hedau, UIUC
- Gabriel Brostow, UCL
- Francesca Odone, University of Genova
- Kyros Kutulakos, University of Toronto
- Andrea Fusiello, University of Verona
- Frank Dellaert, Georgia Tech
- Sven Dickinson, Toronto U
- Min Sun, UMich
- Alessio Del Bue, IIT

Keynote Speakers:
- Antonio Torralba, MIT
- Raquel Urtasun, TTIC
- Marc Pollefeys, ETH Zurich
- Jitendra Malik, UC Berkeley

IMPORTANT DATES (TBC):
Deadline for paper submission…… Sept. 5th, 2013
Notification of acceptance……. Oct. 5th, 2013
Camera-ready copies due to……. Oct. 13th, 2013
Workshop date…… Dec. 2nd, 2013

Submitted papers must have a maximum length of **8 pages** and must adhere to the same ICCV 2013 layout specifications as papers submitted to the main conference. The review process is **double-blind**. Authors do not know the names of the reviewers of their papers. Likewise, reviewers do not know the names of the authors. Please refer to the ICCV main

website for more information about the submission guidelines. All submissions will be handled electronically via CMT system. Accepted papers will be published in the ICCV 2013 CD-ROM Proceedings. **Double submissions** to the 3dRR-13 workshop and any other conference or workshop (even within ICCV-13) **are not allowed.** For more information please visit: http://www.eecs.umich.edu/vision/3dRR13/3dRR13.html