

Background learning for detection and tracking from RGBD videos **(RGBD2017, <http://rgbd2017.na.icar.cnr.it>)**

Catania, Italy, September 11th or 12th, 2017

Workshop in conjunction with ICIAP 2017 (<http://www.iciap2017.com>)

Call for papers

The advent of low cost RGB-D sensors such as Microsoft's Kinect or Asus's Xtion Pro is completely changing the computer vision world, as they are being successfully used in several applications and research areas. Many of these applications, such as gaming or human computer interaction systems, rely on the efficiency of learning a scene background model for detecting and tracking moving objects, to be further processed and analyzed. Depth data is particularly attractive and suitable for applications based on moving object detection, since they are not affected by several problems typical of color based imagery. However, depth data suffer from other type of problems, such as depth-camouflage or depth sensor noisy measurements, which bound the efficiency of depth-only based background modeling approaches. The complementary nature of color and depth synchronized information acquired with RGB-D sensors poses new challenges and design opportunities. New strategies are required that explore the effectiveness of the combination of depth and color based features, or their joint incorporation into well known moving object detection and tracking frameworks.

The aim of the RGBD2017 workshop is to bring together researchers interested in background learning for detection and tracking from RGBD videos, in order to:

- disseminate their most recent research results,
- advocate and promote the research in this area,
- discuss rigorously and systematically potential solutions and challenges,
- promote new collaborations among researchers working in different application areas,
- share innovative ideas and solutions for exploiting the potential synergies emerging from the integration of different application domains.

Relevant topics concerning background learning for detection and tracking from RGBD videos include but are not limited to:

- New or revisited approaches, models, methods and algorithms
- Benchmark datasets
- Performance evaluation
- Applications

The workshop comes with the companion *SBM-RGBD Challenge* specifically devoted to scene background modeling for moving object detection from RGBD videos, aiming at advancing the development of related algorithms and methods through objective evaluation on a common dataset and common metrics.

SBM-RGBD Challenge

Dataset: The SBM-RGBD dataset provides a diverse set of groundtruthed synchronized color and depth sequences provided by the Microsoft Kinect. They have been selected to cover a wide range of scene background modeling challenges for moving object detection (intermittent object motion, color and depth shadows, color and depth camouflage, illumination variations, bootstrapping) and are representative of typical indoor visual data captured in video surveillance and smart environment scenarios.

Performance Evaluation: The SBM-RGBD dataset provides also tools to compute performance metrics commonly adopted for evaluating moving object detection methods and thus identifying algorithms that are robust across various challenges.

Participation:

- Researchers from both the academia and the industry are welcome to submit results.
- Results must be reported for each video of each category.
- Only one set of tuning parameters should be used for all videos.
- Methods published in the past can be submitted as long as extensive evaluation over the whole dataset is performed.

Results from all submissions that meet certain minimum quality standards will be reported and maintained on the workshop website.

Publication

All workshop papers, including those describing methods and results submitted to the SBM-RGBD Challenge, to be published in Springer Lecture Notes in Computer Science (LNCS), will undergo blind peer review in order to guarantee originality and technical soundness.

Important Dates

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| Workshop submission opening and publication of the SBM-RGBD dataset: | May 15, 2017 |
| Deadline to submit workshop papers and challenge results: | June 12, 2017 |
| Notification of acceptance of workshop papers: | July 10, 2017 |
| Deadline to submit camera ready workshop papers: | July 23, 2017 |
| Deadline for workshop author registration: | July 23, 2017 |

Venue

All the ICIAP 2017 workshops will be held in Catania (Sicily) at the *Monastero of Benedettini* (<http://www.monasterodeibenedettini.it/the-monastery.htm>), included in the UNESCO World Heritage List as representative of the late Baroque of South-Eastern Sicily.

Main organizers

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