



Multimedia Tools and Applications

<https://springer.com/11042>

Editor-in-Chief: Borko Furht

Call for Papers

“Multimedia Technology for Security and Surveillance in Degraded Vision” [1204]

Nowadays, computer vision systems are designed to perform in clear scenarios. However in adverse conditions (i.e., in presence of fog, haze, dust, rain, and low light), computer vision systems must contain mechanisms or processes that make them suitable to work in such degraded conditions. During the last few decades, image/video processing approaches have attracted a lot of attention and achieved great success in various computer vision applications. However it has been recognized that the performance of high-level computer vision tasks are highly affected due to the presence of various degradation conditions, and therefore depends on the quality of image restoration and enhancement. Moreover in real world indoor or outdoor scenarios, understanding the illumination/weather effects on scene appearance seems an easy task for the human visual system but turns out to be a challenging task for computer vision systems. At the present time, many public areas are under video surveillance. The illumination effect (i.e. due to low light) or weather effect (i.e. due to fog, haze, rain, dust and other conditions) cause serious degradation in the performance of the automatic surveillance system. Considering an automatic driving system as an example: many industries are trying to cope with the challenges due to illumination/weather degraded conditions; however such degraded conditions will still impair the vision capability of installed cameras and create confusing reflections that may result in problems for self-driving cars, etc. Another example can be found in city/campus/border security and surveillance monitoring: although commercialized cameras are installed by the governments in these areas for continuous monitoring but they will appear fragile in such challenging low illumination/weather conditions. In such extreme situations, there is a chance for intruders to enter the area and perform illegal activities that may not be detected by the unaided vision system because of the high loss in contrast. Hence, these problems throw several challenges to computer vision researchers.

The main objective of this issue is to present the latest research and developing activities related to the different aspects of security and surveillance due to degraded environment conditions. One of the aims of this issue is to open up new research ideas in the challenges of multimodality surveillance videos. Multimodality surveillance videos create specific challenges to tracking algorithms due to low or variable light conditions and the existence of fake objects.

This special issue targets researchers and practitioners from both industry and academia to provide a forum in which to publish high-quality manuscripts covering new research on topics related to computer vision in degraded indoor and outdoor conditions, including but not limited to the following:

- Object identification, tracking, counting and activity recognition from surveillance videos in degraded conditions.
 - Person identification/re-identification from surveillance videos in degraded conditions.
 - Face detection, identification and re-identification in degraded conditions.
 - Multimodality surveillance systems in degraded vision.
 - Multimodal image fusion for object/person identification in degraded conditions.
 - Vision enhancement or restoration in degraded images/videos.
 - Effective deep learning networks for dealing with degraded vision.
 - Novel benchmark datasets in degraded indoor/outdoor conditions.
 - Novel annotation and tools for data labelling in degraded indoor/outdoor conditions.
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Guest Editors

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Important Dates

Deadline for submissions: **Extended to 31 December, 2020**

First round decision: **01 March, 2021**

Deadline for submission of revised manuscript: **01 April, 2021**

Final decision: **15 May, 2021**

Submission Guidelines

Authors should prepare their manuscript according to the Instructions for Authors available from the Multimedia Tools and Applications [website](#). Authors should submit through the

online submission site at <https://www.editorialmanager.com/mtap/default.aspx> and select “**SI 1204 - Multimedia Technology for Security and Surveillance in Degraded Vision**” when they reach the “Article Type” step in the submission process. Submitted papers should present original, unpublished work, relevant to one of the topics of the special issue. All submitted papers will be evaluated on the basis of relevance, significance of contribution, technical quality, scholarship, and quality of presentation, by at least three independent reviewers. It is the policy of the journal that no submission, or substantially overlapping submission, be published or be under review at another journal or conference at any time during the review process.

The special issue will consider papers extending previously published conference papers, provided the journal submission presents a significant contribution beyond the conference paper. Authors must explain in the introduction to the paper the new contribution to the field made by the submission, and the original conference publication should be cited in the text. Note that neither verbatim transfer of large parts of the conference paper nor wholesale reproduction of already published figures is acceptable.