Call for Papers

International Journal of Computer Vision

Special Issue on "Computer Vision for All Seasons: Adverse Weather and Lighting Conditions"

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Scope:

Adverse weather and illumination conditions (e.g. fog, rain, snow, ice, low light, nighttime, glare and shadows) create visibility problems for the sensors that power automated systems. Many outdoor applications such as autonomous cars and surveillance systems are required to operate equally smoothly in such frequent scenarios like bad weather and nighttime. While rapid progress is being made in this direction, the performance of current vision algorithms is mainly benchmarked under clear weather conditions (good weather, favorable lighting). Even the top-performing algorithms suffer from a severe drop in performance under adverse conditions.

Moreover, over recent years, the community has greatly progressed in visibility enhancement in cases such as foggy (hazy) or rainy images, low-light (nighttime) images, shadowed areas, and over-/under-exposed images. Yet, their usefulness to higher-level vision tasks is still largely to be examined and exploited.

This special issue is motivated by the success of our CVPR'19 workshop -- "Vision for All Seasons: Bad Weather and Nighttime", which further confirms that the vision community has recognized the importance of this topic and currently carries out much exciting work in this direction. The field, however, lacks a special issue of a top journal to let this progress take a center stage and to testify to the quality of the work. This special issue aims at exactly doing that. Papers not presented at the workshop are also encouraged for this special issue.

Topics:

The topics of interest include (but are not limited to):

- Image de-hazing (de-fogging), image de-raining and image de-snowing
- Shadow removal, glare removal and reflection removal
- Low-light image enhancement and HDR imaging
- Style transfer and image translation across weather conditions, time of day, and seasons

- Optical flow, depth estimation (from stereo or monocular), visual odometry, etc. in bad weather and at nighttime
- Semantic scene understanding in bad weather and at nighttime
- Domain adaptation from good weather/illumination conditions to adverse conditions
- Learning with synthetic data for adverse weather/illumination conditions
- Vision algorithms invariant to illumination, time of day, weather, and seasons
- Datasets for bad weather and adverse lighting conditions
- Fusing RGB cameras with other types of sensors to handle adverse conditions
- New sensors and novel hardware setups for adverse weather and lighting conditions
- Identification of visibility conditions
- Robust vision algorithms against other adverse conditions

Important Dates:

Full paper submission deadline	10 Dec. 2019
First review decision	20 Feb. 2020
Revised paper due	20 Apr. 2020
Final review decision	20 June 2020
Final manuscript submission	20 July 2020

Paper Submission and Review:

- Authors are encouraged to submit high-quality, original work that has neither appeared in, nor is under consideration by other journals.
- All papers will be reviewed following standard reviewing procedures for the Journal.
- Papers must be prepared in accordance with the Journal guidelines: www.springer.com/11263.
- Submit manuscripts to: http://VISI.edmgr.com; Select “Computer Vision for All Seasons” as the article type when submitting.

If you have any questions, please contact:
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or visit this link:
http://www.vision.ee.ethz.ch/~daid/ijcvcv4as.html