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IEEE Journal of Selected Topics in Signal Processing
Special Issue on Data Driven Media Authentication and Forensics

Ensuring integrity of digital images is one of the most challenging and vital problems of our times. Photographs, video and audio are commonly used for documentation of important events, and require efficient and reliable authentication protocols. The increasing capability of digital media editing software has spawned a torrent of shocking manipulation examples, including the infamous DeepFakes which has been deemed a threat to privacy, democracy, and national security. This special issue will provide a timely vehicle for publishing the best research that has emerged addressing assessment of media integrity. The focus of this issue will be on data-driven approaches using machine learning.

The special issue will include contributions in this emerging field including but not limited to:

- Learning deep features relevant to low-level forensic analysis for problems like manipulation detection, identification of the social network of origin, camera model identification, or detection of artificially generated content.
- Pro-active protection based on digital signatures, watermarking or other such integrity mechanisms based on machine learning.
- Adoption of high-level vision to automate manual analysis that exposes physical inconsistencies, such as reflections, or shadows.
- Media-phylogeny.
- Addressing counter-forensic and adversarial attacks.
- Forensics in the presence of in-camera processing such as HDR, video stabilization, neural imaging pipelines and advanced image fusion techniques.
- Reconstruction of media genealogy.
- Analysis and detection of imagery and videos created by new synthesis methods such as Generative models (GANs and VAEs).
- Registration of media and their signatures in a central repository such as blockchains.
- Accountability of forensics techniques.
- Multimedia authorship attribution.
- Accountable Machine-Learning techniques for Forensics.
- Fairness, Accountability and Transparency in ML-based Forensics Methods.

Prospective authors should follow the instructions given on the IEEE JSTSP webpage:
https://signalprocessingsociety.org/publications-resources/ieee-journal-selected-topics-signal-processing,
and submit their manuscript through the web submission system at: https://mc.manuscriptcentral.com/jstsp-ieee.

Dates:
Submission deadline: ~~01-Nov-2019~~ 01-Dec-2019
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