UNIVERSITY OF CENTRAL FLORIDA

CENTER FOR RESEARCH IN COMPUTER VISION

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"Object-centric anomaly detection in video"

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Hybrid Meeting Hyperlink: Zoom



ABSTRACT

Anomaly detection in video is a challenging computer vision problem, as the classification of an event as normal or abnormal always depends on context. For instance, driving a truck on the street is considered normal, but, if the truck enters a pedestrian area, the event becomes abnormal. Considering the commonly adopted definition of abnormal events and the reliance on context, it is difficult to obtain a sufficiently representative set of anomalies for all possible contexts, making traditional supervised methods less applicable to abnormal event detection. In this talk, we will present a series of recent anomaly detection methods that are trained without direct supervision. The presented methods propose alternative object-centric approaches such as designing proxy self-supervised tasks or using pseudo-abnormal or virtual examples in an adversarial fashion. By focusing strictly on objects, object-centric approaches can significantly reduce false detection rates, forming a viable solution for real world scenarios.

BIOGRAPHY

Radu Tudor Ionescu is Professor at the University of Bucharest, Romania. He completed his PhD at the University of Bucharest in 2013. He received the 2014 Award for Outstanding Doctoral Research in the field of Computer Science from the Romanian Ad Astra Association. His research interests include machine learning, computer vision, image processing, medical imaging, text mining and computational linguistics. He published over 100 articles at international peer-reviewed conferences (e.g.: CVPR, NeurIPS, ICCV, ACL, EMNLP, NAACL, EACL, ECML-PKDD, WACV, INTERSPEECH) and journals (e.g.: IEEE TPAMI, IJCV, COLI, CVIU, NN), and a research monograph with Springer. Radu received the "Caianiello Best Young Paper Award" at ICIAP 2013 for the paper entitled "Kernels for Visual Words Histograms". He also received the "Young Researchers in Science and Engineering" Prize and the "Danubius Young Scientist Award 2018 for Romania" from the Austrian Federal Ministry of Education, Science and Research and by the Institute for the Danube Region and Central Europe. Together with his co-authors, he participated at several international competitions obtaining high ranks: 4th place in the Facial Expression Recognition Challenge of the 2013 WREPL Workshop, 3rd place in the Native Language Identification Shared Task of the 2013 BEA Workshop, 2nd place in the Arabic Dialect Identification Shared Task of the 2016 VarDial Workshop, 1st place in the Native Language Identification Shared Task of the 2017 BEAWorkshop, 1st place in the Arabic Dialect Identification Shared Task of the 2017 and 2018 VarDial Workshops.