

# LDA Based Classification of Video Surveillance Sequences Using Motion Information

Abdou Khadre DIOP\*, Serban MEZA\*\*, Mihaela GORDAN\*\*, Aurel VLAICU\*\*

\**Department of Information and Communications Technology (ICT), Alioune DIOP University Bambey, Senegal*

\*\**Research Center for Information Multimedia and Telecommunications Technical University Cluj Napoca, Romania*

[abdoukhadre.diop@uadb.edu.sn](mailto:abdoukhadre.diop@uadb.edu.sn), [serban.meza@com.utcluj.ro](mailto:serban.meza@com.utcluj.ro), [mihaela.gordan@com.utcluj.ro](mailto:mihaela.gordan@com.utcluj.ro),  
[aurel.vlaicu@com.utcluj.ro](mailto:aurel.vlaicu@com.utcluj.ro)

**Abstract**— Video surveillance is one of the key components in today's public security. The possibility to identify abnormal events in such sequences is a difficult problem in computer vision with the aim of providing automatic means of analysis. The use of Latent Dirichlet Allocation (LDA) provided encouraging results for topic classification in text documents and extensions to the video range have already been presented in the literature. The paper approaches video sequence classification considering the extension of the LDA model by building a vocabulary based on motion information “words” that are used to isolate events/topics present in the video. The implementation is tested on the PETS datasets and results are compared with state of the art.

**Keyword**—Latent Dirichlet Allocation (LDA), video surveillance, motion information, probability distribution.



**First A. Author** : Dr. Abdou Khadre DIOP was born the 10th of July 1979 in Pikine, Dakar, Senegal. He received the degree in Telecommunications PhD thesis from the Cheikh Anta DIOP University of Dakar (Senegal) in 2013. From 2012 to 2014, he was employed as ATER at the Department of Technology and Information Communication of the Alioune DIOP University. Since 2014 he was employed as permanent Teacher and Researcher at that department. His current research areas cover transmission of the video sequence in Video Surveillance.