

# Chapter 3

## Computer Vision and Building Resilience Against Online Violent Extremism in Africa: Computer Vision for Fake News Detection

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### **ABSTRACT**

*This chapter reviews how new technologies driven by artificial intelligence have a wide range of impact in advancing violent ideologies in Africa. In particular, the chapter analyses how computer vision is helping to advance radical and extreme ideologies and how to build resilience against the phenomenon. This work has found that terrorist organisations are tapping artificial intelligence through computer vision to develop synthetic videos, graphics, and images to advance their goals. It was revealed that transformative education has the potential to develop all round humans capable to thrive and navigate in ever changing and dynamic online ecosystem.*

### **INTRODUCTION**

Globally, the number of terrorist attacks has increased by 17% to 5,226. In Africa, cases have exponentially increased particularly in Sub-Saharan Africa (Burkina Faso, the Democratic Republic of the Congo, Mali, and Niger). For example, deaths in the Sahel region account for 35% of global terrorism deaths in 2021, compared

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with just 1% in 2007 (Institute for Economics and Peace, 2022). In Africa, like the rest of the world, technological innovation has always shaped the dynamics of conflicts. Advances in computing as well as the development of artificial intelligence (AI) have wide-ranging impacts in advancing violent extremism (VE) (Heidelberg Institute for International Conflict Research (HIIC), 2022; RAN, 2021). An exemplar, synthetically computer audios and videos so called deep fakes continue to capture the imagination of the computer-graphics and computer-vision communities, at the same time, the democratization of access to technology that can create a sophisticated manipulated video of anybody saying anything continues to be of concern because of its power to disrupt democratic elections, commit small to large-scale fraud, fuel disinformation campaigns, and promote radical and extreme ideologies (Agarwal, Farid, El-Gaaly and Lim, 2020; Crawford, Keen and Suarez de-Tangil, 2020). Not only are people accessing synthetic videos of executions and those amplifying violent ideologies, but they can now more easily be targeted by terrorists and extremists in online chat rooms, gaming platforms and other open and dark spaces online (RAN, 2021; Albahar, 2017).

Through artificial intelligence, the social world is becoming available to algorithms, which read not emotions or faces but structured data, tabulations that can be contained in a data file. This is, increasingly, the work of the digital camera. Far from generating images, what digital cameras produce is not only standardized data files containing data that enable a data reader to display an image, but also metadata that apart from specifying how to read the file and possibly containing a thumbnail preview of its contents enables open tagging as well as geotags, timestamps, equipment tags, and a myriad of other operations of describing and or classifying the files (Rocco et al., 2021). A previous Islamic State (ISIS) case study by Gambetta and Hertog revealed that engineers and technological gurus are overrepresented among violent Islamist extremists who are tapping computer vision driven by artificial intelligence to advance violent extremism (Muro, 2017). This is not different to other extremism groups in Africa who are affiliated to ISIS. So if new technologies can be used for a wrong course, it is likely to cause more harm than good to humanity especially computer algorithms which may not comply with required ethics as programmed or when driven by AI unlike the way humans who could distinguish between the right and wrong. Since new technologies is not going away, there is need to build human capability to counter its harmful effects. As such, the proposed chapter provides an analysis of computer vision and how to build resilience against online VE in Africa.

## **THE STUDY OBJECTIVES**

This chapter will seek to achieve the following objectives:

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