Explainable AI in analyzing the nature of Autism and cybercrime conversations on large underground forums

Abstract

The increasing prevalence of Autism Spectrum Disorder (ASD) has sparked important discussions about its relationship with cybercrime. However, prior research on this connection has produced conflicting findings. Some studies suggest that individuals with autism may be more prone to cybercrime, while others indicate a lower likelihood of engaging. This contradiction highlights the complexity of the relationship between autism and cybercrime, emphasizing the need for a deeper investigation. Cybercrime forums serve as platforms for discussing illicit activities, including autism-related cybercriminal behaviour, with active participation from genuine actors. This study leverages Explainable AI (XAI) techniques to analyse large underground forums, uncovering the linguistic and sentiment patterns in autism-related discussions. Using Large Language Models (LLMs), the research investigates the involvement of autistic individuals in cybercrime. Previous studies indicate that autism-related terms are often associated with negative connotations. While acknowledging these associations, it is essential to recognize that individuals with autism may still be inadvertently involved in cybercrime discussions. A comprehensive examination will provide a more accurate understanding of the interactions between cyber criminals with autistic individuals, investigating the types of computer-related offenses, topics, tools, and techniques used in these spaces. The proposed research aims to contribute to cybercrime prevention and protect vulnerable individuals, fostering safer online environments. Furthermore, the study's outcomes will inform the development of policies that protect autistic and neurodiverse individuals in cyberspace.