15th ICCCNT 2024 Submission 3318

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Submission 3318	
Title	A Comprehensive Survey of Dark Web Crawlers
Paper:	(May 15, 15:04 GMT)
Track	Cyber Security
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Abstract	Due to the widespread use of powerful encryption algorithms and advanced anonymity routing, the field of cyber crime investigation has greatly changed, posing difficult obstacles for law enforcement organizations (LEAs). Consequently, law enforcement agencies (LEAs) are increasingly relying on unencrypted web information or anonymous communication networks (ACNs) as potential sources of leads and evidence for their investigations. LEAs have access to a significant tool for gathering and storing potentially important data for investigative purposes: automated web content harvesting from servers. Although web crawling has been studied since the early days of the internet, relatively little research has been done on web crawling on the ”dark web” or ACNs like IPFS, Freenet, Tor, I2P, and others. This work offers a thorough systematic literature review (SLR) with the goal of investigating the characteristics and prevalence of dark web crawlers. After removing pointless entries, a refined set of 34 peer-reviewed publications about crawling and the dark web remained from an original pool of 58 articles. According to the review, most dark web crawlers are written in Python and frequently use Selenium or Scrapy as their main web scraping libraries. The lessons learned from the SLR were applied to the creation of an advanced Tor-based web crawling model that was easily incorporated into an already-existing software toolbox designed for ACN-focused research. Following that, a series of thorough experiments were conducted to thoroughly analyze the model’s performance and show that it was effective at extracting web content from both conventional and dark This work provides more than just a review; it advances our knowledge of ACN-based web crawlers and provides a reliable model for digital forensics applications, including the crawling and scraping of both clear and dark web domains. The study

	also emphasizes the important ramifications of retrieving and archiving content from the dark web, emphasizing how crucial It is for generating leads for investigations and offering crucial supporting evidence. To sum up, this study highlights how important it is to keep researching dark web crawling techniques and how they might be used to improve cybercrime investigations. It also highlights promising directions for future study in this quickly developing sector, highlighting how crucial it is to use cutting edge technologies to effectively fight cybercrime in a digital environment that is becoming more complicated
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