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A Dark Web Pharma Framework for A More Efficient Investigation of Dark Web COVID-19 Vaccine Products.

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A Dark Web Pharma Framework for A More Efficient Investigation of Dark Web COVID-19 Vaccine Products.

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DISSERTATION APPROVAL FORM

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This dissertation is approved as a credible and independent investigation by a candidate for the Doctor of Philosophy degree and is acceptable for meeting the dissertation requirements for this degree. Acceptance of this dissertation does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department or university.

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ABSTRACT

Globally, as the COVID-19 pandemic persists, it has not just imposed a significant impact on the general well-being of individuals, exposing them to unprecedented financial hardships and online information deception. However, it has also forced consumers, buyers, and suppliers to look toward a darkened economic world – the Dark Web world – a sinister complement to the internet, driven by financial gains, where illegal goods and services are advertised sold. As the Dark Web gains an increase in recognition by normal web users during this pandemic, how to perform cybercrime investigations on the Dark Web becomes challenging for manufacturers, investigators, and law enforcement officers.

This research aims to (1) understand the Dark Web, in general, the impact Dark Web markets have on the pharmaceutical industry during the time of this pandemic, (2) comprehend the procurement of various COVID-19 vaccine products that are procured on the Dark Web, and (3) ultimately create a Dark Web pharmaceutical open-sources investigative framework, which the pharmaceutical industry, manufacturers, investigative analysts, and law enforcement can utilize. This framework will aid them in understanding better and navigating the Dark Web space as they investigate illicit activities or cyber-crimes involving COVID-19 vaccine products procured from the Dark Web markets.

The proposed framework is a methodology with four steps and was built upon the known Justine Nordine OSINT framework template, a web-based tool developed primarily in JavaScript programming language. A qualitative grounded theory analysis was applied to evaluate the tool. Research findings serve as a reference paper and contribute significantly to the pharmaceutical investigators' community and the OSINT and Dark Web investigative communities.

Keywords: *Dark Web, COVID-19 Vaccines, OSINT, Cybercrime Investigations*