Effective Use of Self-Organized Feature Map with a Surrogate Model for Anticounterfeiting Measures in E-Commerce

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Within the e-commerce industry, online counterfeiting continues to be a significant concern. Advanced solutions are required due to the sophistication and adaptability of counterfeiting techniques. The Organization for Economic Co-operation and Development (OECD) has noted that in 2019, counterfeiting accounted for USD 464 billion, or 2.5 percent, of all commerce worldwide. The wider social ramifications, like child labor, drug trafficking, and money laundering, highlight how urgent intervention is. In response, our study began analyzing 23,000 Paris Saint-Germain (PSG)-related e-commerce listings from thirty well-known platforms, such as Redbubble, Alibaba, Amazon, and Mercado Libre. A composite classifier was created by combining textual (Title, Description, Seller Name, and Product URL) and image data. By utilizing the Self-Organized Feature Map together with a surrogate model, this multi-modal method was able to detect real listings from fake listings with an astounding 90% accuracy rate. By combining text and image analytics, this all-encompassing approach provides a strong and all-encompassing anti-counterfeiting strategy that strengthens the integrity of e-commerce platforms and guarantees a safer online marketplace for users.

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