



## WI-FI BASTION

### ABSTRACT

Wi-Fi Bastion is a cutting-edge web-based application developed to safeguard users from potential cyber threats posed by malicious Wi-Fi networks. By scanning available Wi-Fi networks in real time, the app detects and identifies suspicious networks, such as those with weak or no encryption, or networks attempting to mimic legitimate hotspots through "Evil Twin" attacks. The application employs Python for backend processing, utilizing advanced network scanning libraries to analyze SSIDs, BSSIDs, encryption types, and signal strengths. The intuitive front-end interface, built with HTML, CSS, and JavaScript using Bootstrap, ensures a modern, responsive design, providing a seamless user experience across various devices. Real-time results and alerts are displayed interactively, empowering users to make informed decisions before connecting to any Wi-Fi network.

To enhance user security, Wi-Fi Bastion integrates a MongoDB database for storing historical network scan data and patterns, allowing users to track potential threats over time. The application provides detailed insights into each detected network, including the risk level associated with each, and sends instant notifications for any identified security risks. The platform is designed for global accessibility, offering a cross-platform solution that can be accessed from any modern web browser. Wi-Fi Bastion is an invaluable tool for individuals and businesses, particularly in public spaces like airports, cafes, and hotels, where users are often vulnerable to Wi-Fi-based cyberattacks. By offering proactive protection and insightful reports, the app ensures safer connections and a more secure browsing experience.

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