# **Wi-Fi WPA2 Key Extractor GUI**

A modern, animated Python GUI tool for capturing WPA2 handshakes and cracking Wi-Fi passwords using aircrack-ng utilities. Designed for ethical hacking, educational use, and cybersecurity research.

## **🚀 Features**

* Dark-themed PyQt5 interface
* One-click Wi-Fi scan using nmcli
* Automatic best-client deauthentication using aireplay-ng
* Live handshake capture via airodump-ng
* Key cracking with aircrack-ng
* Real-time progress bars and status indicators
* Built-in Wi-Fi restoration feature

## **📁 Project Structure**

project\_root/

├── wpa2\_gui.py # Main GUI script

├── README.md # Project readme

├── wpa2\_extractor\_sdd.md # Software design document

├── scmp.md # Configuration management plan

├── performance\_risk\_analysis.md # Performance testing & risk assessment

├── wordlists/

│ └── rockyou.txt.gz # Example password wordlist

└── .git/ # Version control directory

## **🛠️ Requirements**

* Python 3.6+
* Kali Linux or compatible Debian-based distro
* External USB Wi-Fi adapter (monitor mode capable)
* Tools:  
  + aircrack-ng
  + nmcli
  + sudo

### **Python Dependencies:**

sudo apt install python3-pyqt5 aircrack-ng network-manager

## **🧪 How to Run**

sudo python3 wpa2\_gui.py

🔒 Must be run with root privileges for packet injection and monitor mode.

## **📊 Performance & Testing**

* Scans networks in < 10s
* GUI stays responsive using background threads
* Tracks CPU/RAM usage
* Documented test cases in performance\_risk\_analysis.md

## **⚠️ Legal Disclaimer**

This tool is intended for **educational and authorized security testing only**. Unauthorized use on networks you don’t own or have permission to test is illegal.

Use responsibly. By using this tool, you agree to these terms.

## **👤 Author**

**Laxmish Saini** Cybersecurity & Software Development Enthusiast  
 📅 Last updated: March 31, 2025