

Availability of data and materials

The corpus of URL is crawled from AlexaTop [//https://www.alexa.com/topsites](https://www.alexa.com/topsites), which stopped service in 2022, but we still can obtain the last version of the site rank. Uploaded as BenignURL.csv.

The URLhaus database [//https://urlhaus.abuse.ch/](https://urlhaus.abuse.ch/) provides malicious URLs. Uploaded as MaliciousURL.csv.