

ISOT Web Interactions (Mouse/Keystroke/Site Actions) Dataset

The dataset consists of mouse, keystroke, and site actions (menus) for 24 different users visiting and interacting with a website, and using freely the site (in continuous mode). The website was an experimental social networking site implemented for the purpose of the experiment. The data was collected between March 16, 2010 and May 13, 2010, and involved 24 participants.

The dataset includes both genuine samples, and attack data, where some of the users tried to forge the sessions of genuine users.

Data Organization

The raw data is organized and saved in three folders which corresponding to three types of data:

1. Keystroke dynamics
2. Mouse dynamics
3. Site Actions

Each category consists of genuine data files and attack data files. The file name is in the format of:

[user name]_[data type]_[session id].txt

The [user name] is “user” followed by a number to distinguish a user from other users. The data type is any one of the following “keystroke_data”, “mouse_data”, and “site_action_data”. The session id is a string of numbers and letters which was generated by the web server.

Every file contains all the data collected within one web session. A session here refers to a web visit between the time of login and logout.

Raw Data

The following explains the details of each type of raw data.

The timestamp in keystroke data files and mouse action data files is generated from JavaScript code and corresponds to the number of milliseconds since midnight of January 1, 1970 and the specified date.

Keystroke Data

A keystroke data file consists of keystroke time stamps, user name, and session id. Example data is as shown below:

| User | KeyDownTimeStamp | KeyReleaseTimeStamp | SessionID |
|-------|------------------|---------------------|------------------------------|
| user1 | 1270927177311 | 1270927177391 | 928ebfe1abd4e77ff013f936aa60 |
| user1 | 1270927177878 | 1270927177998 | 928ebfe1abd4e77ff013f936aa60 |
| user1 | 1270927196141 | 1270927196216 | 928ebfe1abd4e77ff013f936aa60 |

.....

KeyDownTimeStamp – the time stamp when a key is pressed.

KeyReleaseTimeStamp – the time stamp when a key is released

Mouse Data

A mouse action file consists of mouse cursor coordinates and mouse action time stamps.

Example data is shown below:

| User | X | Y | MouseTimeStamp | MouseDownTimeStamp | MouseUpTimeStamp | SessionID |
|-------|-----|-----|----------------|--------------------|------------------|------------------------------|
| user1 | 252 | 276 | 1270927140521 | 0 | 0 | 928ebfe1abd4e77ff013f936aa60 |
| user1 | 252 | 276 | 1270927140535 | 0 | 0 | 928ebfe1abd4e77ff013f936aa60 |
| user1 | 252 | 276 | 1270927140992 | 0 | 0 | 928ebfe1abd4e77ff013f936aa60 |
| user1 | 235 | 273 | 1270927147474 | 0 | 0 | 928ebfe1abd4e77ff013f936aa60 |

.....

X – x-coordinate

Y – y-coordinate

MouseTimeStamp – mouse movement event time stamp

MouseDownTimeStamp – mouse left button press time stamp if a mouse click event happens

MouseUpTimeStamp – mouse left button release time stamp if a mouse click event happens

Site Actions

A site action file consists of user site action data which include the name of the action, the time the action was performed and the identity of the user and the session.

| User | Action | Time | SessionID |
|-------|----------------------------|---------------------|------------------------------|
| user1 | log in as legal user | Apr 10 2010 12:19PM | 928ebfe1abd4e77ff013f936aa60 |
| user1 | say agree on the agreement | Apr 10 2010 12:21PM | 928ebfe1abd4e77ff013f936aa60 |
| user1 | add status | Apr 10 2010 12:26PM | 928ebfe1abd4e77ff013f936aa60 |

.....

Action – the specific action performed by the user.

Time – the action time.

References

To cite this dataset, use the following:

1. I. Traore, I. Woungang, M. S. Obaidat, Y. Nakkabi, and I. Lai, "Combining Mouse and Keystroke Dynamics Biometrics for Risk-Based Authentication in Web Environments", 4th IEEE International Conference on Digital Home (ICDH 2012), Guangzhou, China, November 23-25, 2012, pages 138-145
2. I. Traore, I. Woungang, M.S. Obaidat, Y.Nakkabi, and I. Lai, "Online Risk-based Authentication using Behavioral Biometrics", Journal of Multimedia Tools and Applications, Springer, July 2014, 71(2): 575-605.