

User authentication using deep learning on SapiMouse dataset

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In the last few years, there was an increase in applications that utilize user authentication and bot detection based on mouse movements. This led to increasing interest and curiosity regarding the analysis of human-computer interaction, and the topic of this paper is a specific area of this, namely mouse dynamics. In this talk, we introduce a new dataset called SapiMouse, which is valuable for training and evaluating neural networks, to be later applied in user authentication or bot detection systems. Firstly, we present the exploratory data analysis of this dataset, along with the tools and protocols we implemented for collecting the raw data. Further on, we discuss the user authentication results in light of the above mentioned dataset. To learn the features from the raw data, the system laid out here uses a convolutional neural network, instead of regular handcrafted features. The system achieved a 0.94 AUC performance, using merely 15 seconds of data.

References

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