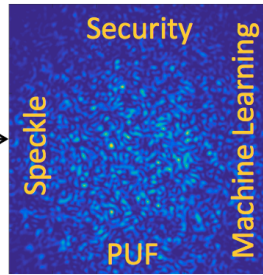


BOOST
CHALLENGE



Break Our Optical Security Technology

Overview

BOOST is being organized as the first scientific challenge on optical PUFs (Physical Unclonable Functions). The aim of the challenge is to confirm or disprove the validity of security assumptions that are often made about optical PUF responses. PUFs have emerged as a cost-effective identification/authentication technology, which is urgently needed in the Internet-of-Things (IoT) era. Especially speckle-based optical PUFs, with their unique combination of properties: they are passive, in the sense that the PUF itself contains no electronics and needs no power; they can be read out using a cheap laser and an ordinary smartphone camera; they can be challenged with many different degrees of freedom and contain a large amount of entropy. **BOOST** is a challenge to the Machine Learning community, aimed to improve our understanding of correlations inside speckle patterns and between speckle patterns.

Organizers

- Boris Škorić (TU Eindhoven, The Netherlands);
- Teddy Furon (Univ Rennes, Inria, CNRS, IRISA);
- Slava Voloshynovskiy (Univ of Geneva, Switzerland).

Schedule

Stage 1:

Start date: February 1st, 2018

End date: July 31st, 2018

Stage 2:

Start date: June 1st, 2018

End date: September 30th, 2018

Challenge Rules

Two datasets will be made available

1. Training data. Query-response pairs from two different PUFs, “A” and “B”. The queries are given as configuration files for a beam-shaping optical element known as Spatial Light Modulator. The responses are given as grayscale images of the response speckle pattern.
2. Challenge data. A list of queries different from the ones in the training dataset, each query accompanied by a response from either PUF A or PUF B. It is not indicated which PUF.

The task is to find out, for each query in the challenge dataset, from which PUF the response was obtained. The challenge will have two phases. In the 2nd phase more training data is made available. The winner will be the competitor who has submitted the most accurate answer.

Additional Information

More details about the challenge are available at: <https://tinyurl.com/BOOSTchallenge>

The **BOOST** challenge is organized in the scope of the project ID_IoT (<http://www.chist-era.eu/projects/idiot>)

