

Best Paper award for a Cosic member (Carmela Troncoso ESAT/SCD/COSIC)at the IEEE International Workshop on Information Forensics and Security 2011

The paper "[Fingerprinting Tor's Hidden Service Log Files Using a Timing Channel.](#)" co-authored by Juan A. Elices (University of New Mexico), Fernando Perez-Gonzalez (University of Vigo) and Carmela Troncoso (ESAT/SCD/COSIC) has won the Student Best Paper Gold Award at [the IEEE International Workshop on Information Forensics and Security \(WIFS11\)](#), a top research conference on multimedia forensics and security.

Abstract: Hidden services are anonymously hosted services that can be accessed over Tor, an anonymity network. In this paper we present an attack that allows an entity to prove, once a machine suspect to host a hidden server has been confiscated, that such machine has in fact hosted a particular content. Our solution is based on leaving a timing channel fingerprint in the confiscated machine's log file. In order to be able to fingerprint the log server through Tor we first study the noise sources: the delay introduced by Tor and the log entries due to other users. We then describe our fingerprint method, and analytically determine the detection probability and the rate of false positives. Finally, we empirically validate our results.