Projeto de Formatura – 2023 – Press Release

PCS - Departamento de Engenharia de Computação e Sistemas Digitais

Engenharia Elétrica – Ênfase Computação

Tema: IoT Forensics: Current State-of-the-Art and the Creation and Extension of a Forensic Tool

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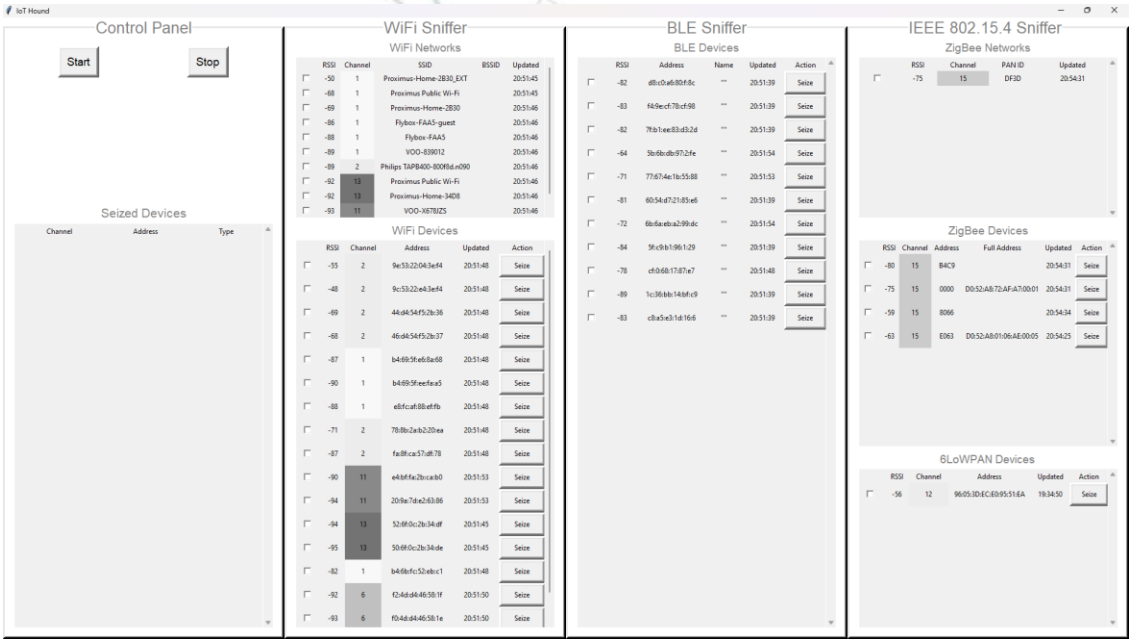
São Paulo, 2023 — Today, Igor Nunes Ferro, a student at the Escola Politécnica da Universidade de São Paulo, unveils a work that explores the current state of Internet of Things (IoT) Forensics. Titled "IoT Forensics: Current State-of-the-Art and the Creation and Extension of a Forensic Tool", this work is the result of extensive research and development efforts focused on two main objectives: summarizing the current state-of-the-art practical procedures and theoretical frameworks in IoT forensics and introducing a new, user-friendly IoT forensics tool. This has been a work in partnership with the Université catholique de Louvain, located in Belgium.

The reason for this research is that IoT has rapidly become an integral part of our daily lives, with smart homes leading the way. A report from Statista research[1] reveals that the global number of households integrated into the smart home market is projected to nearly double by 2027, reaching 672.57 million worldwide. This surge in IoT adoption underscores the need for robust forensic procedures and tools to investigate crime scenes involving these devices.

The developed work provides an analysis of the literature, looking for the applied methods, going through theoretical frameworks, practical procedures, and noticing the existing challenges in the IoT Forensics landscape. By conducting a comprehensive literature review, key gaps were identified and the author emphasizes the importance of addressing the unique challenges posed by IoT devices in forensic investigations.

Another contribution brought by the work is the development of a cutting-edge IoT forensics tool. This software, equipped with a Graphical User Interface (GUI), aims to assist investigators in locating and identifying IoT devices at crime scenes by capturing frames sent by the devices in a crime scene. The tool addresses the current lack of clarity and standardized procedures for locating IoT devices in real-world crime scenes, providing investigators with a user-friendly solution.

The work was successful, bringing to life this software that was thoroughly tested and validated, simulating real scenarios that the investigators might face. A picture of the GUI for the software created is shown below.



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1 https://www.statista.com/forecasts/887613/number-of-smart-homes-in-the-smart-home-market-in-the-world