

Internet of Things: Spy Your Mate

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Politecnico di Milano — June 16, 2022

1 Introduction

In this project, you are requested to analyze the traffic generated by a webcam call and, from such traffic, identify whether a person or only the background is recorded in the video. You have to approach this problem from a *Machine Learning* (ML) perspective.



Adopted Environment It is important to point out the hardware and software (specific versions) used to fulfill the requirements, in order to replicate the achieved results. For this project I used:

- Apple MacMini8,1 w/ Intel Core i5 and 32 GB RAM, running macOS 12.4;
- Wireshark 3.6.6;
- Jupyter Notebook w/ Python 3.9, using virtualenv;
- NodeRED 2.2.2 running on Docker 4.9.0;
- Zoom.us 5.10.7.

2 Setup

2.1 Network and Traffic Acquisition

In the following diagram, a simplified version of the network topology used is displayed.

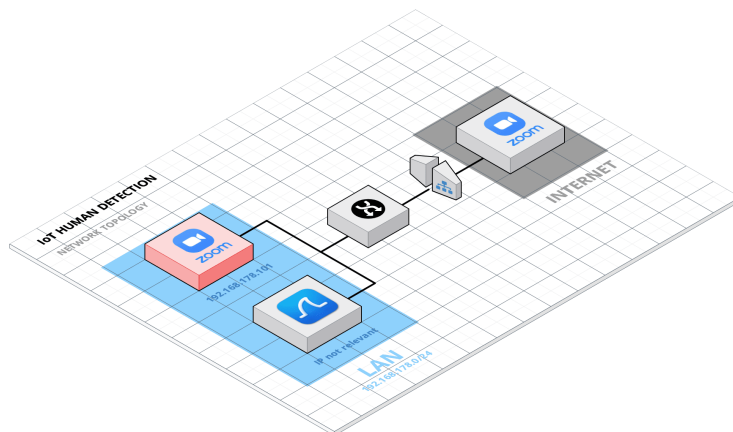


Figure 1: Network Topology: a simplified version of the LAN, target in red.

2.2 NodeRED and Dashboard

In order to