

# Training:

## Machine Learning for Network Security and Malware Detection

Date of the training: **March 18–19, 2019** in Heidelberg, Germany

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### Overview

You will create new machine learning algorithms to detect real malware traffic and attacks in the network. From studying the basis of network traffic, seeing real malware attack, create your dataset, extract features, to creating your own algorithm and evaluate it for improvements. A fast-paced hands-on training on how to get started in machine learning for network security.

To create new Machine Learning algorithms with the new python frameworks its easier than ever. However, our models still need designing, evaluation, tuning and especially good datasets and labels. In this training we will share high-quality and real network datasets of normal users being infected with malware. The goal is to learn to understand the problem, identify features, create your own ML models and finally test it against all the other models in the room! A fast-paced workshop going from traffic understanding to working python ML models in 2 days. Learn why ML is so difficult in network security and so useful. Work to obtain the highest detection performance and improve your knowledge. We will use many tools, including Colab, Python, NetFlows, scikit-learn and Pandas. At the end, take your own algorithm home!

## The goals are

- To understand the basic principles of simple machine learning methods for network traffic
- To analyze real malware traffic and create in 2 days a machine learning algorithm to detect it
- To understand why ML is hard on network traffic and how to improve it
- To dominate the basic tools and methods to get started with your own machine learning models

## Prerequisites

Attendees should know:

- Python
- Network knowledge and protocols

Optionally is preferred:

- Basic Pandas

## Requirements

- Laptop
- Power cable
- A web browser
- A google account

## About the Speaker: Veronica Valeros

Veronica Valeros is a researcher and intelligence analyst from Argentina. Her research has a strong focus on helping people and involves different areas from wireless and Bluetooth privacy issues to malware, botnets and intrusion analysis. She has presented her research on international conferences such as BlackHat, EkoParty, Botconf and others. She is the co-founder of the MatesLab hackerspace based in Argentina, and co-founder of the Independent Fund for Women in Tech. She is currently the director of the CivilSphere project at the Czech Technical University, dedicated to protecting civil organizations and individuals from targeted attacks.

## About the Speaker: Sebastian Garcia

Sebastian Garcia is a malware researcher and security teacher that has extensive experience in machine learning applied on network traffic. He created the Stratosphere IPS project, a machine learning-based, free software IPS to protect the civil society. He likes to analyze network patterns and attacks with machine learning. As a researcher in the AIC group of Czech Technical University in Prague, he believes that free software and machine learning tools can help better protect users from abuse of their digital rights. He has been teaching in several countries and Universities and working on penetration testing for both corporations and governments. He was lucky enough to talk in Ekoparty, DeepSec, Hacktivity, Botconf, Hacklu, InBot, Security Sessions, ECAI, CitizenLab, ArgenCor, Free Software Foundation Europe, Virus Bulletin, BSides Vienna, HITB Singapore, CACIC, etc. As a co-founder of the MatesLab hackerspace he is a free software advocate that worked on honeypots, malware detection, distributed scanning (dnmap) keystroke dynamics, Bluetooth analysis, privacy protection, intruder detection, robotics, microphone detection with SDR (Salamandra) and biohacking.

## Booking

Recommended Online Booking of Trainings Through:

Sign-Up Form <https://troopers.de/tickets/>

Voucher code: **TR19\_HMTS**

Using this voucher code automatically gives you an additional 5% off the current valid price! You can register with this code up until March 11th, 2019 or until seats have run out.

## Contact

**Need assistance?** Don't hesitate to call us. We are fluent in English and German.

Zögern Sie nicht uns zu kontaktieren. Wir sprechen fließend Englisch und Deutsch.

### Troopers Organization Team

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