

Problem:

Data allows us to calculate risks, evaluate options, and make informed decisions. Network logs and telemetry data multiplies in volume every day, so that human operators can not follow it anymore. Consequently, critical information is overlooked, resulting in suboptimal decision-making, or in extreme cases, operational catastrophes.

Solution:

OPT/NET BV has developed an anomaly detection platform called **OPTOSS AI**. It closes the gap of human inefficiencies in telecom industry. Developed under incubation programme in ESA SBIC Noordwijk, and through collaboration with UvA in AI research, OPTOSS AI effectively addresses the root cause of telecom system outages today. This platform allows human operators to monitor the data-stream in its entirety, identifying all potentially anomalous events in real time with its proven ML AI approach. In the scope of this project, we propose to adapt and apply real-time anomaly detection capabilities of OPTOSS AI to the new type non-structured time series data and new operational concepts present in SARNET prototype.

Project description

In the scope of this project, we propose to adapt and develop new capabilities for processing of SDN and NFV telemetry data streams and to apply real-time anomaly detection capabilities in SARNET demo prototype.

Student will have access to the open source code of OPTOSS and will be tasked to integrate OPTOSS with SARNET and create new plug-in modules and data processing algorithms under supervision of the OPT/NET BV and SARNET mentors.

He/she will also be responsible for development of the 'AI knowledge packs' specifically targeted for automatic detection of various anomalies occurring in SARNET prototype. 'AI knowledge packs' will include the model for decoding of the telemetry, trained AI datasets and mitigation scripts, which will deploy various functions onto the test bed networks.

Expected skills: Perl, Python, Bash scripting, C/C++ is a bonus, Cloud and real networking and Linux server analytic skills. AI knowledge or skills are NOT required, but may be learned during the work on the project.

Project duration - 6 month

Confidentiality - non applicable. Results of student's works will be publicly available for inclusion into SARNET prototype during duration of the project. Most of the source code developed will be transferred to the Open Source project OPTOSS NG-NetMS.

Compensation - market rate for internships of this sort will be provided

So what?:

This approach broadens the scope of OPTOSS AI platform's use cases to a new set of important applications, including dDoS detection and mitigation, malicious activity detection and prevention, network and data centre infrastructure monitoring from operational support perspective among many others.

Specific attention will be devoted to the intelligent decision-making support and identification of the best candidate tasks for complete or partial automation through applications of the developed technology.

References:

OPTOSS AI website:

<http://optoss.ai>

Alarming the Intrusion Expert - UvA/FNWI - University of Amsterdam

<https://esc.fnwi.uva.nl/thesis/centraal/files/f1323545811.pdf>

OPT/NET BV Current Situation:

Founded in 2012, we have had 5 years of profitable operations. We have a strong team of mentors to guide us in our endeavours, with the European Space Agency (ESA) selecting us to partake in their incubation program in 2013. We graduated the program with patented technology, live deployments and customers.

Currently, OPT/NET BV is selected as one of the most promising AI startups in the world by the Rockstart AI Accelerator.