Real-time cybersecurity analytics on financial transactions' data

INFINITECH Pilot#10

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This project has received funding from the European Union's horizon 2020 research and innovation programme under grant agreement no 856632

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- Response to the CALL H2020 ICT-11-2018 Innovation Action
- Grant Agreement INFINITECH # 856632
- Project Budget: 21.080.482,00 €
- EC Grant: 15.870.480,00 €
- Started 1st October 2019 Ending 31st December 2022
- Duration 39 months
- 46 Participants (Industry Banks and Insurance, Academia, FinTechs)
- Reporting 1st Period until 31st March 2021

Tailored IoT & BigData Sandboxes and Testbeds for Smart, Autonomous and Personalized Services in the European Finance and Insurance Services Ecosystem



Project Goals

Beyond the state of the art, and demonstrates innovation potential

ground-breaking objectives

- novel concepts and approaches
- new products, services or business and organisational models

Innovation

- Enhance innovation capacity
- Create new market
 opportunities
- Strengthen competitiveness and growth of companies

- Capacity and Capabilities in execution
- Complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise

Market

Execution

INFINITECH is a joint effort of global leaders in ICT and finance towards

- lowering the barriers for BigData/IoT/AI driven innovation
 - Boosting regulatory compliance and
 - stimulating additional investments

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Real-time cybersecurity analytics on financial transactions' data - *Business Motivation*

Traditional approach to block potentially fraudulent transactions is through rules- based systems. Despite the appeal of the rulesbased approach, it has natural limitations.

A system for Batch Machine Learning training (and periodic retraining) combined with Stream Machine Learning prediction can address such limitations.

Such systems provide low coverage

• Only a few highly accurate rules can be found

They are limited by fixed thresholds

• Ideal value for threshold can change over time. Moreover, it might be better to have different threshold ranges

They fail to capture interactive effects

• Probing and finding these interactive effects is difficult

They have low relative performance

• Simple rules alone can't find risky transactions



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Pilot#10 – Innovation

Innovation Business

- Lower costs through efficiencies generated by higher automation, reduced errors rates, and better resource utilization
- Ability to address major growth area as new types of frauds are expected
- Minimizing Disruption for Legitimate Customers
- Client trust and security



• Batch and stream Integrated system to handle retraining while real time ML prediction occurs.

- Integration of Supervised and Unsupervised Al Models
- Machine Learning retrainig automation
- Real time big data processing and fraud prediction



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Increase in the number of malicious behaviors identified

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- Increase in the number of transactions per minute analysed
- Reduction in false positives



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∞Infinitech Pilot#10 - Real-time cybersecurity analytics on financial transactions' data GOAL

Combine supervised and unsupervised machine learning into a single fraud detection system

Self-learning AI to continually retrain unsupervised model

Machine Learning model retraining based on fraud analyst feedback

Real-time machine learning to online fraud detection

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To leverage Machine Learning techniques to improve significantly the detection rate of frauds attempts and enable the identification of securityrelated anomalies while they are occurring by the real-time ML detection of the financial transactions and continuous batch ML retraining.

Pilot #10 – Workflow



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Micro-service based platform for composition, deployment optimization, execution and monitoring of

Big Data Analytics workflows (covering ingestion, preparation, analysis, visualization).

Designed and developed on top of the most cuttingedge **Open Source** Big Data technologies and frameworks.







Use it as you want





CLOUD Everything you want, in cloud ON PREMISE Everything you need, at home

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HYBRID Work in cloud, run at home

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Thank you!



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