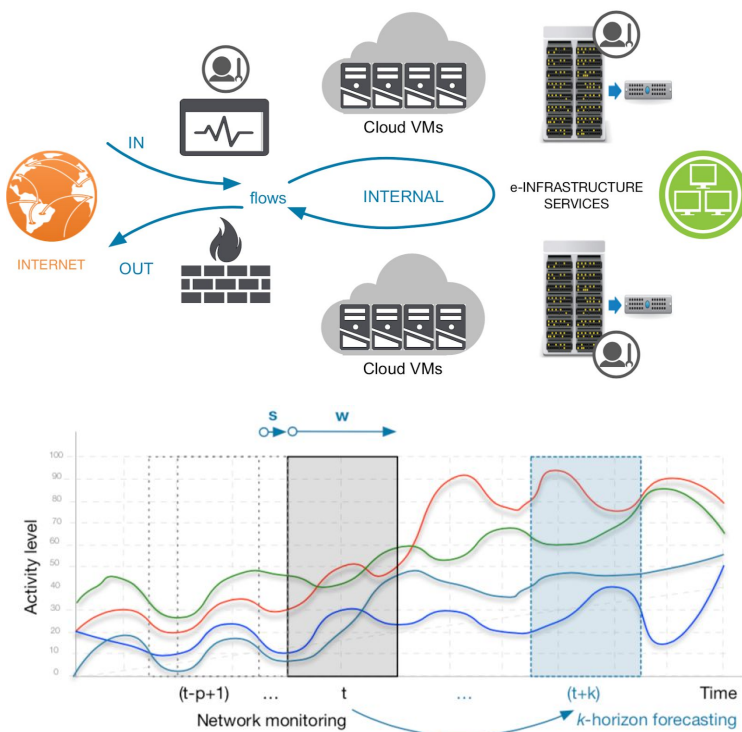


# PROACTIVE NETWORK MONITORING

Time-series forecasting, abnormal state detection



Intelligent module for proactive network monitoring and security protection

Time-series forecasting, abnormal state detection

Enhancing functionality of surveillance Intrusion Detection System

Challenge dynamic and evolving network environments

**Machine learning**  
application with  
**deep learning**  
modeling

**EU H2020 DEEP-HybridDataCloud**

Use Case:  
Network monitoring and security protection for  
computing infrastructure

**Team**

**Giang Nguyen**, Štefan Dlugolinský, Viet Tran,  
and Ladislav Hluchý



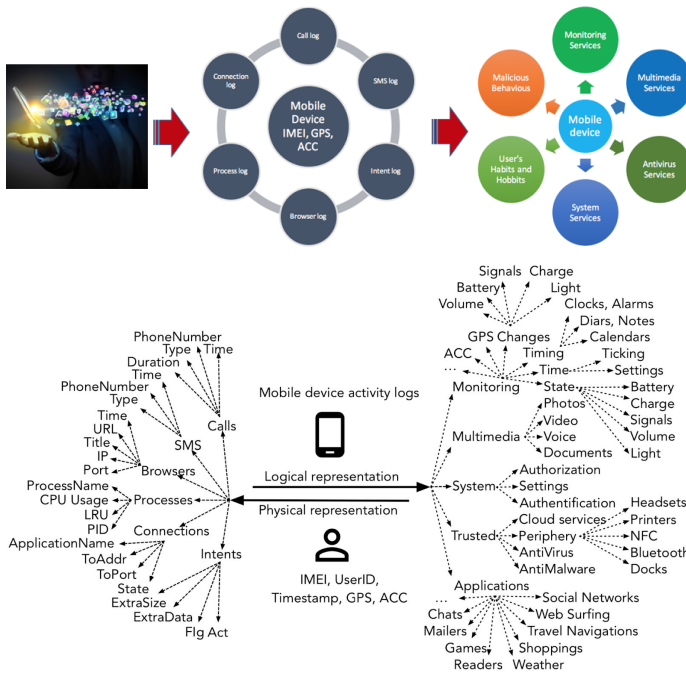
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# SUSPICIOUS ACTIVITY DETECTION

Detection of suspicious activities based on mobile logs



Cyber-security awareness  
for mobile device users

Abnormal behavioural  
detection based on  
collected mobile logs

Incremental machine  
learning solution for  
private mobile network

Privacy preserving data  
mining due to sensitive  
personal information

**Commercial  
contract**

**IBM Slovakia  
Tempest a.s.**

**Team**

**Giang Nguyen, Štefan Dlugolinský, Viet Tran,  
and Ladislav Hluchý**



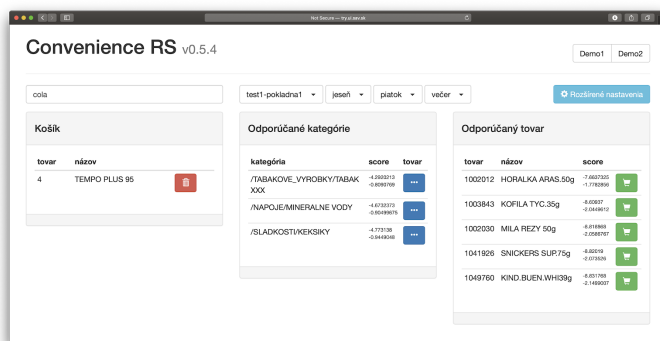
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# SHOPPING CART ITEM PREDICTION

Proactive sales support based on historical transactional data



Innovation of the business sale model and deriving benefits from transactional data

Understanding and providing better services for customers



Increasing the number of sold items per visit

Dynamic category/item prediction based on shopping cart content

**Exploratory  
Data Analysis**

**Slovnaft a.s.**

**Demo**

<http://try.ui.sav.sk/convenience-rs/>

**Team**

**Štefan Dlugolinský**, Martin Šeleng, Giang Nguyen,  
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# TARGETED ONLINE ADVERTISING

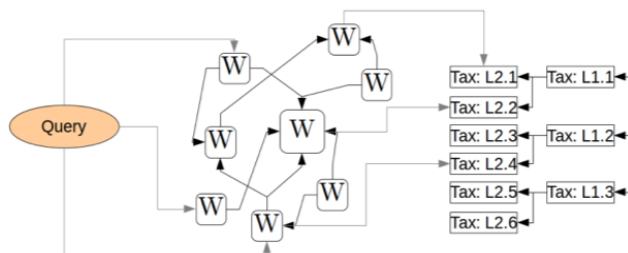
Intent-Search Query categorization, Click-Through Rate prediction



Big Data processing and targeted advertising engines

Boost online targeting revenues

- Intent-Search Query categorization
- Click-Through Rate prediction
- Query Primary Language based on keyboard identifications
- User modelling
- Fraud detection



**Commercial contract**

**Magnetic Media Online, Inc., NY, USA**

**Team**

Michal Laclavík, **Martin Šeleng**, Marek Ciglan, Štefan Dlugolinský, Giang Nguyen, and Ladislav Hluchý



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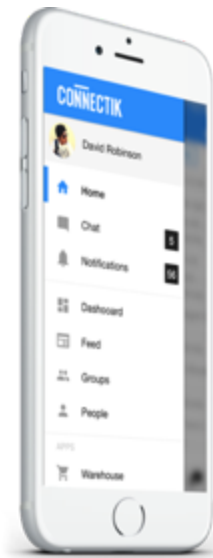


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# UNIFIED COLLABORATION ENGINE

Recommendation engine for collaboration

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Recommendation engine for communication and collaboration for enterprises

Suggests interactions for users/posts/groups.

Users and groups modeling are built with content-based filtering and temporal decay.

**Commercial contract**

**Connectik, Switzerland**

**Team**

**Martin Šeleng**, Štefan Dlugolinský,  
and Ladislav Hluchý



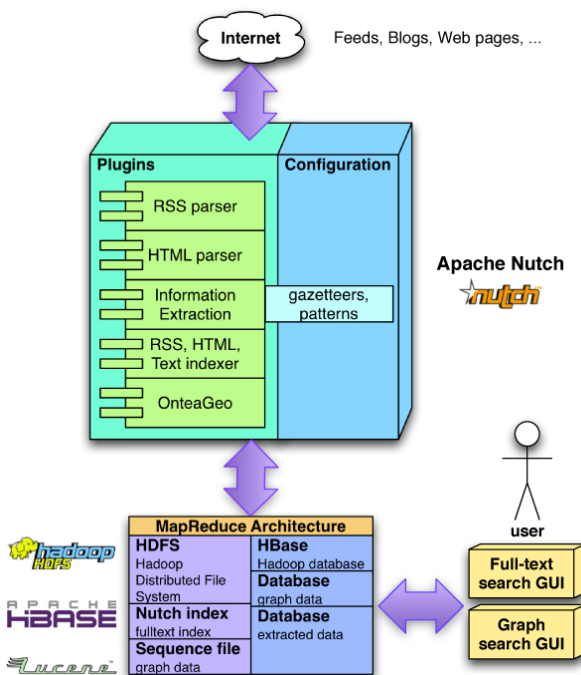
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# DISCOVERY PLATFORM

## Indexing, Extraction and Search at scale



Discovery platform delivers configurable platform for indexing, searching and extracting features defined by users from monitoring web content.

The search and discovery functionalities are powered and improved by the semantics and AI techniques



**Commercial contract**

**SCS Group, Switzerland**

**Team**

Michal Laclavík, **Martin Šeleng**, Marek Ciglan, Štefan Dlugolinský, Zoltán Balogh, Emil Gatiaľ, and Ladislav Hluchý



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