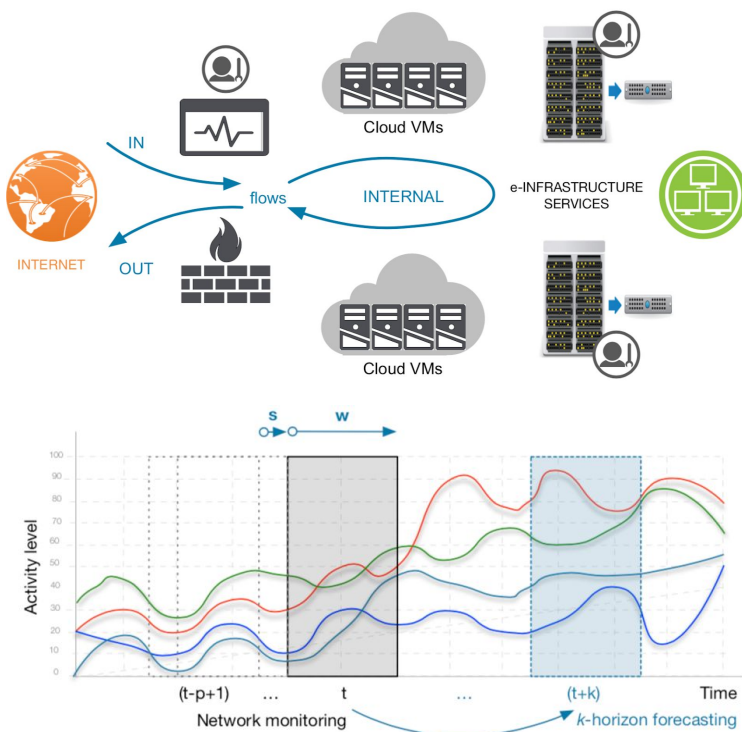


# PROACTIVE FORECASTING

Time-series forecasting, proactive monitoring, abnormal state detection



Time-series forecasting,  
abnormal state detection

Intelligent module for  
network monitoring and  
security protection

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: Massive Online DataStream  
Proactive network monitoring and  
security protection for computing infrastructure

**Team**

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



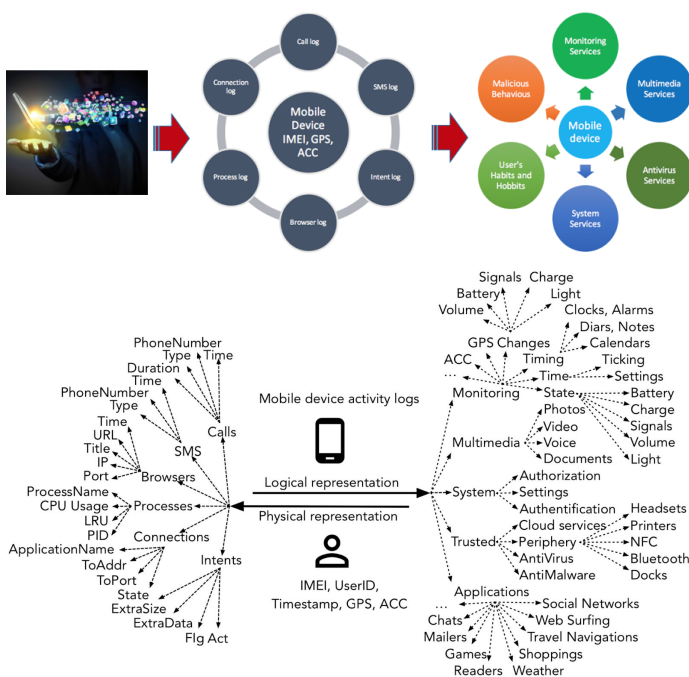
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# MALICIOUS ACTIVITY DETECTION

Detection of users malicious activities based on mobile device logs



Cyber-security awareness  
for mobile device users

Abnormal behavioural  
detection based on  
mobile device 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**



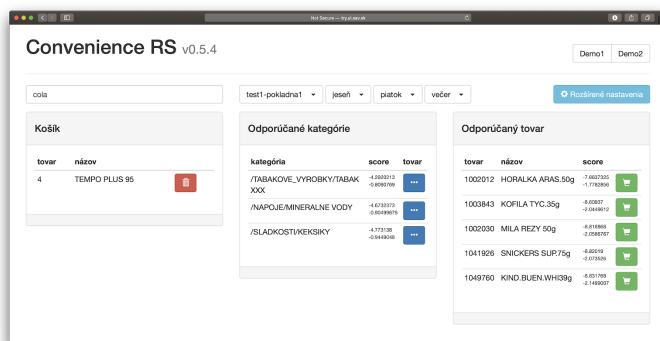
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# SHOPPING CART ITEM PREDICTION

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,  
and Ladislav Hluchý



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# TARGETED ONLINE ADVERTISING

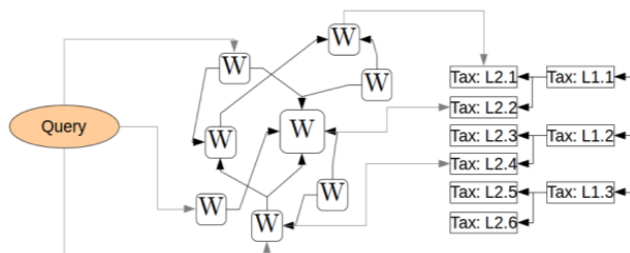
Intent-Search Query categorization, Click-Through Rate prediction



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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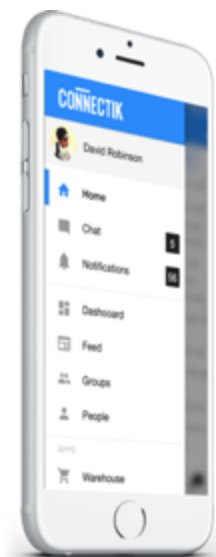


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# UNIFIED COLLABORATION ENGINE

Recommendation engine for enterprise communication and collaboration

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Recommendation engine for communication and collaboration for enterprises

Suggests interactions for users/posts/groups

User and group modelling is based on content-based filtering and temporal decay

**Commercial contract**

**Connectik, Switzerland**

**Team**

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



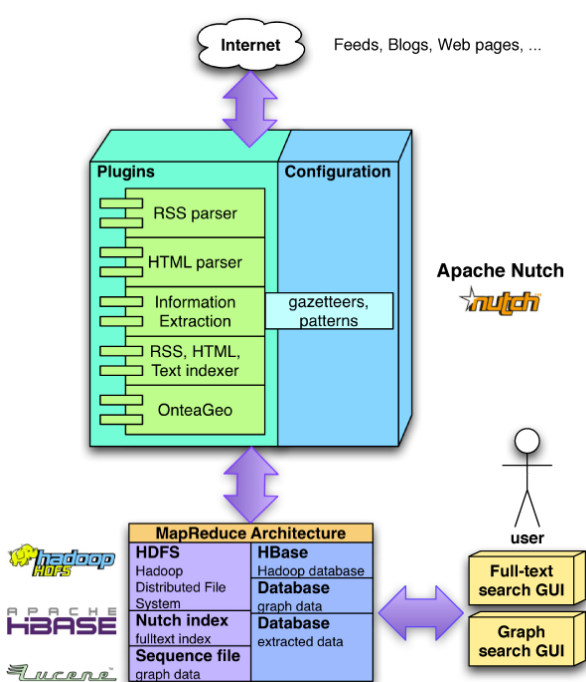
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# DISCOVERY PLATFORM

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 semantic 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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