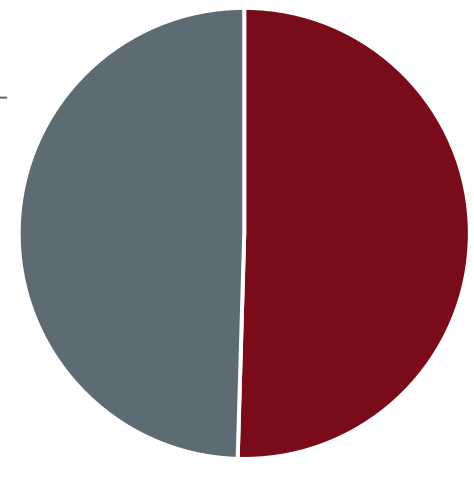


AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

OWNERSHIP STRUCTURE

49.54 %
FEDERATION OF AUSTRIAN INDUSTRIES (through VFFI)



50.46 %
REPUBLIC OF AUSTRIA
Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology

1.400

EMPLOYEES

165 m EUR

TOTAL REVENUES as of YE 2020

88,6 m EUR
48,9 m EUR
23,7 m EUR
3,7 m EUR

Contract research revenues (incl. grants)
BMK funding
Other operating income, incl. Nuclear Engineering Seibersdorf
Profactor (51% of 7,9 m EUR)

R&D Domains

Cultural Data Science <ul style="list-style-type: none"> FAIR Data Principles Digital Preservation Electronic Archiving Culturomics 	Industrial Data Science <ul style="list-style-type: none"> Digitalisation Industry 4.0 Predictive Maintenance Spatial DS 	Data Science for Public Security <ul style="list-style-type: none"> Virtual Assets and DeFi Consumer Protection Disinformation Hybrid Threats Assisting LEAs Anti-Terror 	Green Data Science <ul style="list-style-type: none"> Environment Agriculture Recycling
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NLP Computer Vision AI Audio Trustworthy AI Geo-spatial Analytics

AI Ethics Applied Artificial Intelligence XAI

Contact

ROSS KING
Head of Competence Unit
Data Science & Artificial Intelligence
Center for Digital Safety & Security

AIT Austrian Institute of Technology GmbH
Giefinggasse 4 | 1210 Vienna | Austria
T +43 50550-4271 | M +43 664 8251045
ross.king@ait.ac.at | www.ait.ac.at

Topics

Trustworthy AI

Image/Video <ul style="list-style-type: none"> Object Detection Object Tracking Biometrics Media Forensics 	Audio <ul style="list-style-type: none"> Event Detection Scene Classification Keyword Detection Speech to Text Embeddings & Similarity 	Text <ul style="list-style-type: none"> Named Entity Recognition Sentiment detection Hate Speech detection Sexism detection Text Similarity Large Language Models 	Time Series <ul style="list-style-type: none"> Anomaly Detection Predictive Maintenance Geo-Spatial analysis Movement prediction
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Multi-Modal Analytics

Disinformation Detection

Topic-Lead: Dr. Alexander Schindler
Thematic Coordinator
Multi-Modal AI

Dr. Martin Boyer
Senior Research Engineer

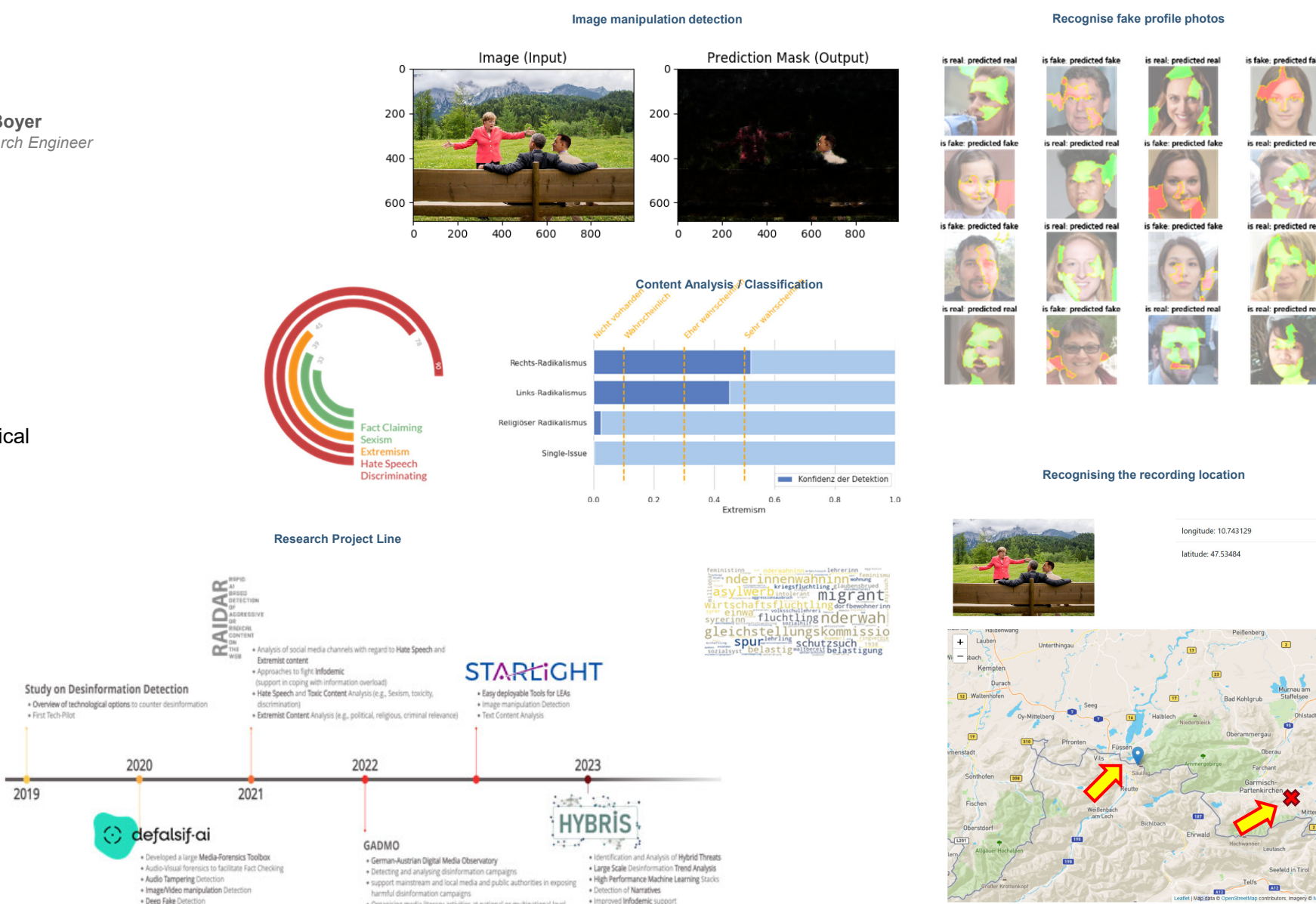
Customers: Austrian government agencies

Topic Goals:

- Identify disinformation threats
- Identify Hate Speech & Extremism
- Analyse Hybrid Threats & Threats against critical infrastructures

Topic Results:

- Threat analysis report
- Prototype detectors for
 - Fake faces
 - Extremist Symbols
 - Deepfakes
 - Misleading news
 - Extremist Content
 - Sexism, writing/reporting style, etc.



Multimedia Forensics

Topic-Lead: Dr. Martin Boyer
Senior Research Engineer

Dr. Alexander Schindler
Thematic Coordinator
Multi-Modal AI

Dr. Sven Schiaber
Scientist

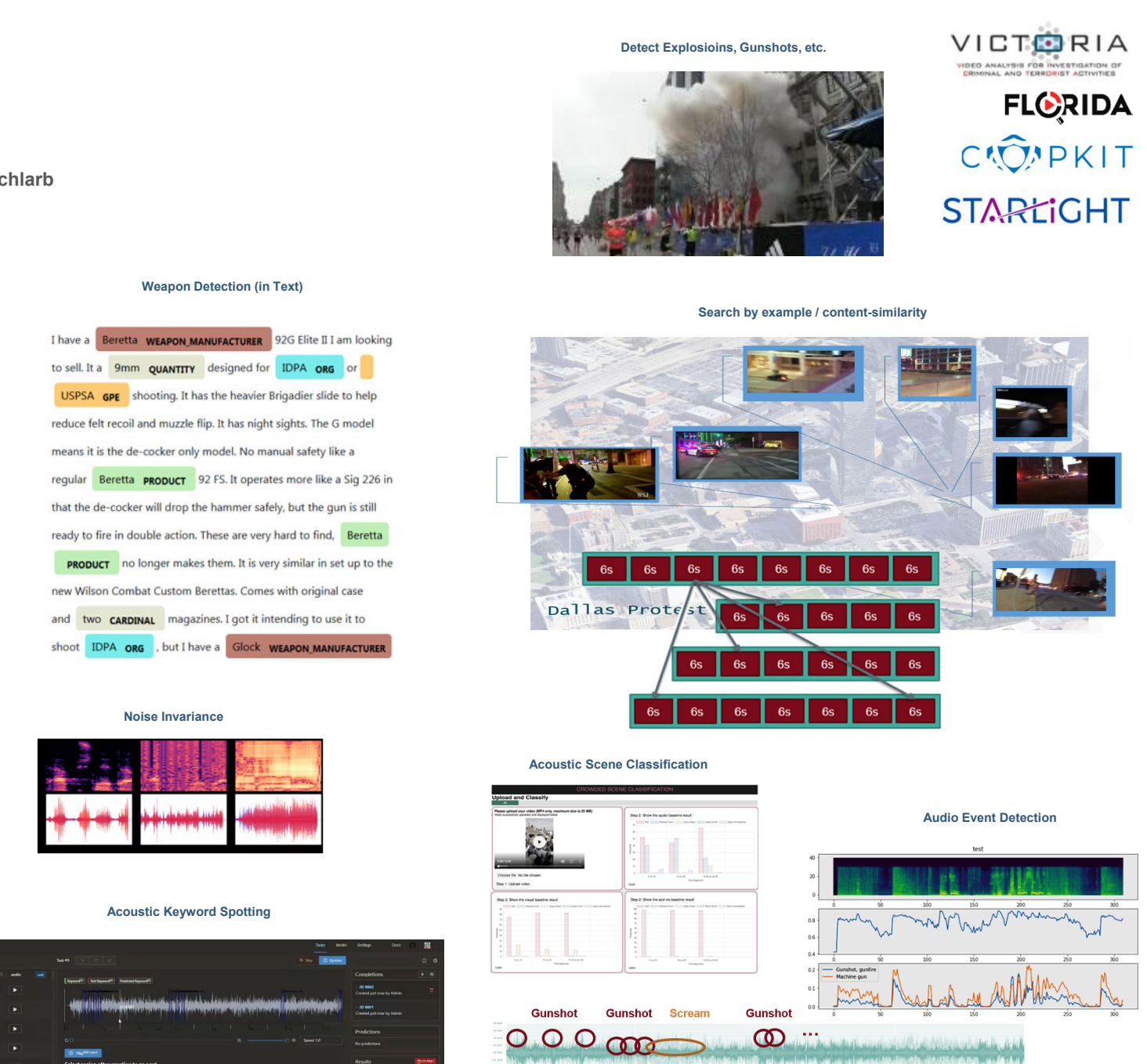
Customers: Law Enforcement Agencies (nat., EU)

Topic Goals:

- Identify investigation relevant concepts in mass-multi-media data
- Assist LEAs agents in identifying relevant content / suspects (Crime, Terrorism)
- Reduce information overload

Topic Results:

- Visual object detectors / trackers
- Acoustic Scene Classification
- Audio Event Detection
- Speaker Identification / Diarization
- Acoustic Keyword Spotting
- Named Entities: Weapons, Drugs



Fraud Detection

Topic-Lead: Mag. Andrew Lindley
Research Engineer

Customers:

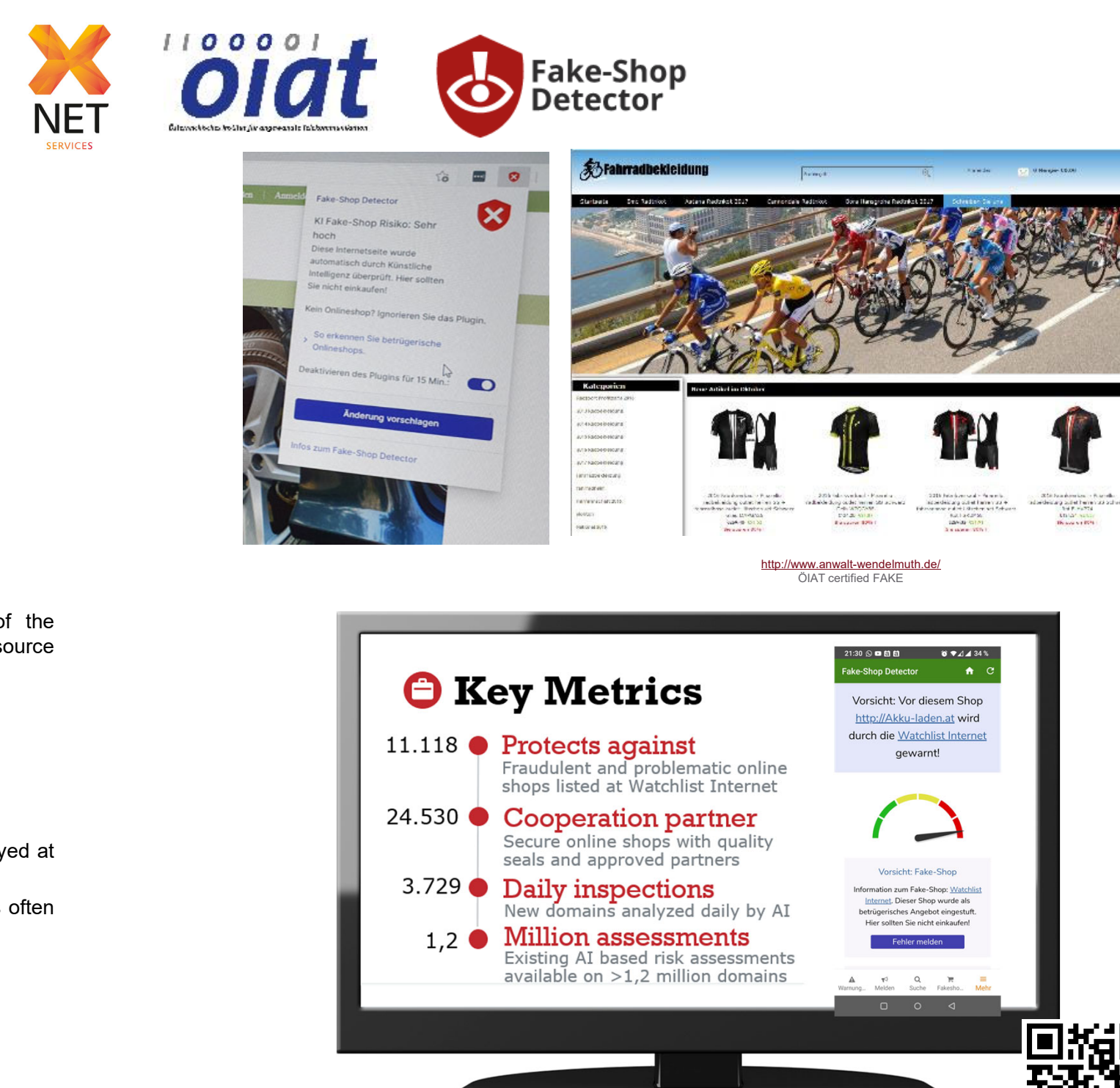
- Austrian government agencies
- Watchlist Internet
- Free Service for Austrian consumers

Topic Goals:

- classifying fraudulent online shops purely on the basis of the similarity of their characteristics intrinsically contained in the source code

Topic Results:

- Fake Shop Detection**
 - Fraudsters operate at a rapid pace, fake-shops are deployed at large numbers and most often have a limited uptime.
 - Because enforcement of consumer rights against fraudsters is often impossible, prevention plays a key role.



Deep Learning for Outage prediction

Topic-Lead: Dr. Clemens Heitschacher
Scientist

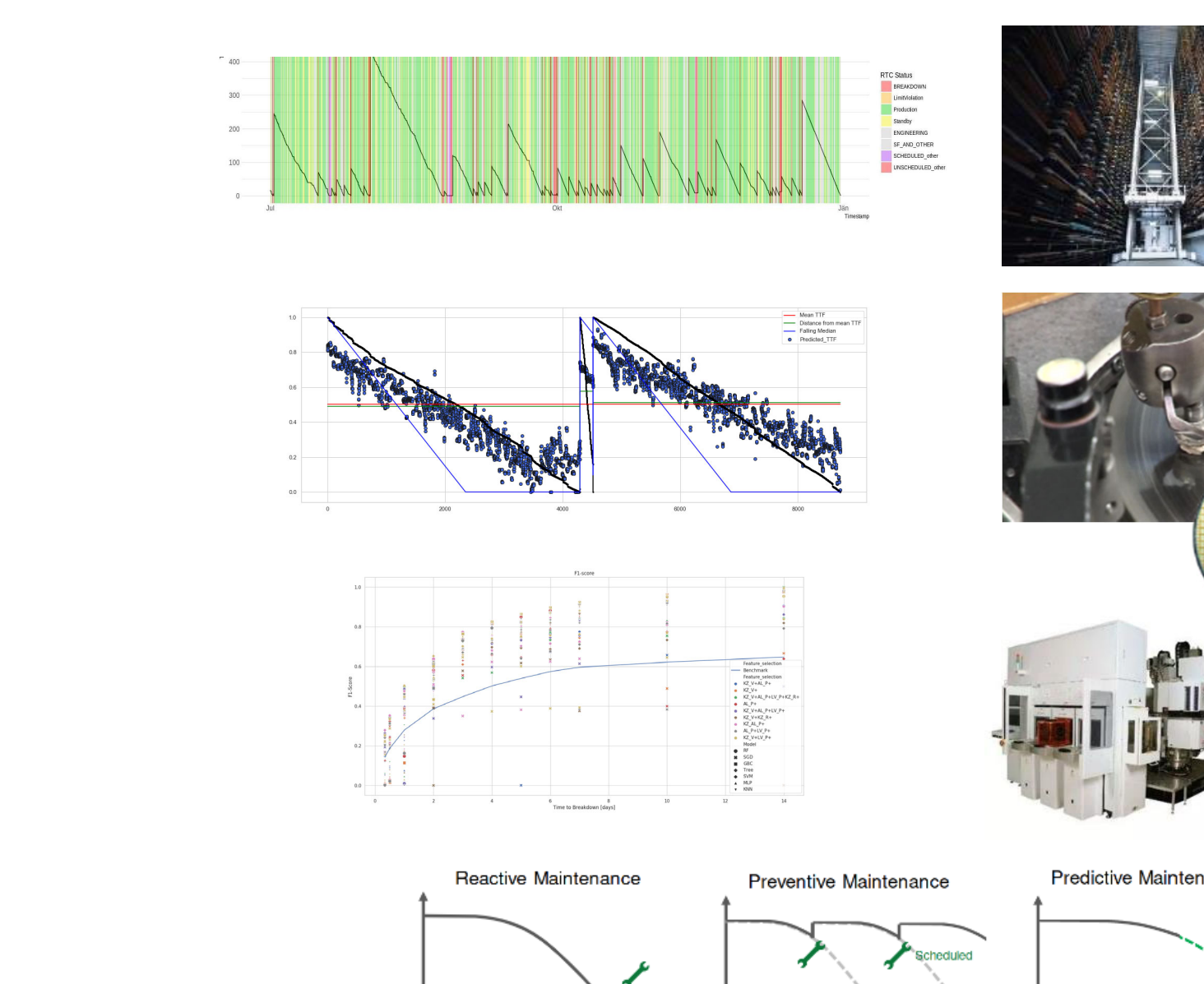
Customers: SPAR, SWAROVSKI, Uniflence, Fraunhofer

Topic Goals:

- Provide generic algorithmic building blocks for
 - outage prediction in data streams
 - data-driven maintenance strategy for plasma etch systems

Topic Results:

- Explainable DL models for predicting outages
- Stream-based analytics and visualization algorithms
- Data-driven maintenance and decision support models
- Machine learning models for predicting time-to-failure (TTF)
- Prediction models with precisions up to 90%, potential reduction of down-time between 12-21%, increased overall availability of 2%
- Maintenance strategy and deployment concept
- Recommendations for further increasing data quality and prediction capabilities



Spatial Data Science

Topic-Lead: Dr. Anita Graser
Scientist

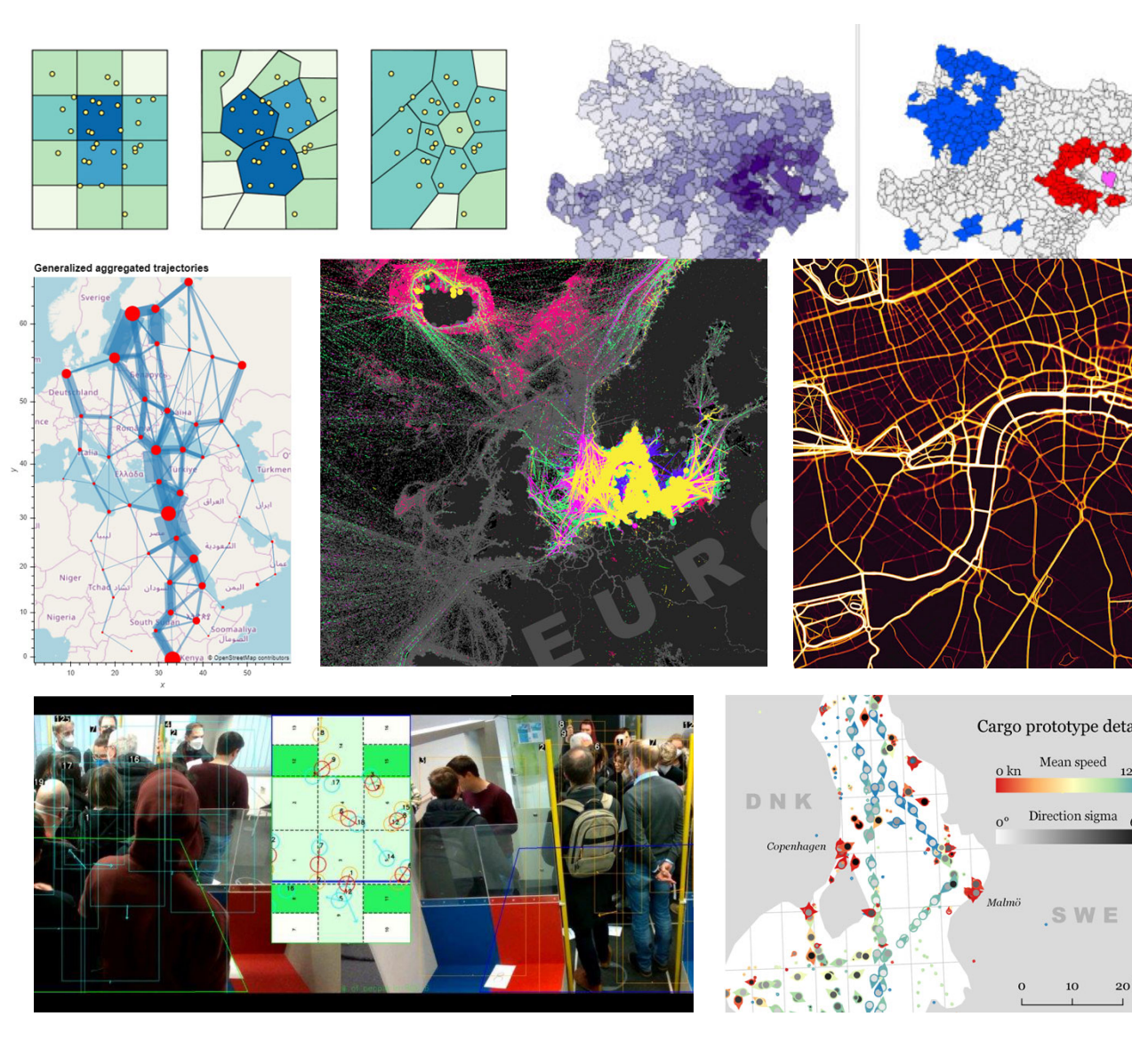
Customers: Frequentis, Seasy, Siemens

Topic Goals:

- Provide methods and tools to build AI for spatiotemporal data
- Apply geospatial machine learning (GeoAI) to improve model results

Topic Results:

- Spatiotemporal analytics & visual analytics
- Location selection & classification
- (Geo)Data-driven machine learning
- Movement classification, prediction & anomaly detection



Explainable AI

Topic-Lead: Dr. Anahid Jalali
Scientist

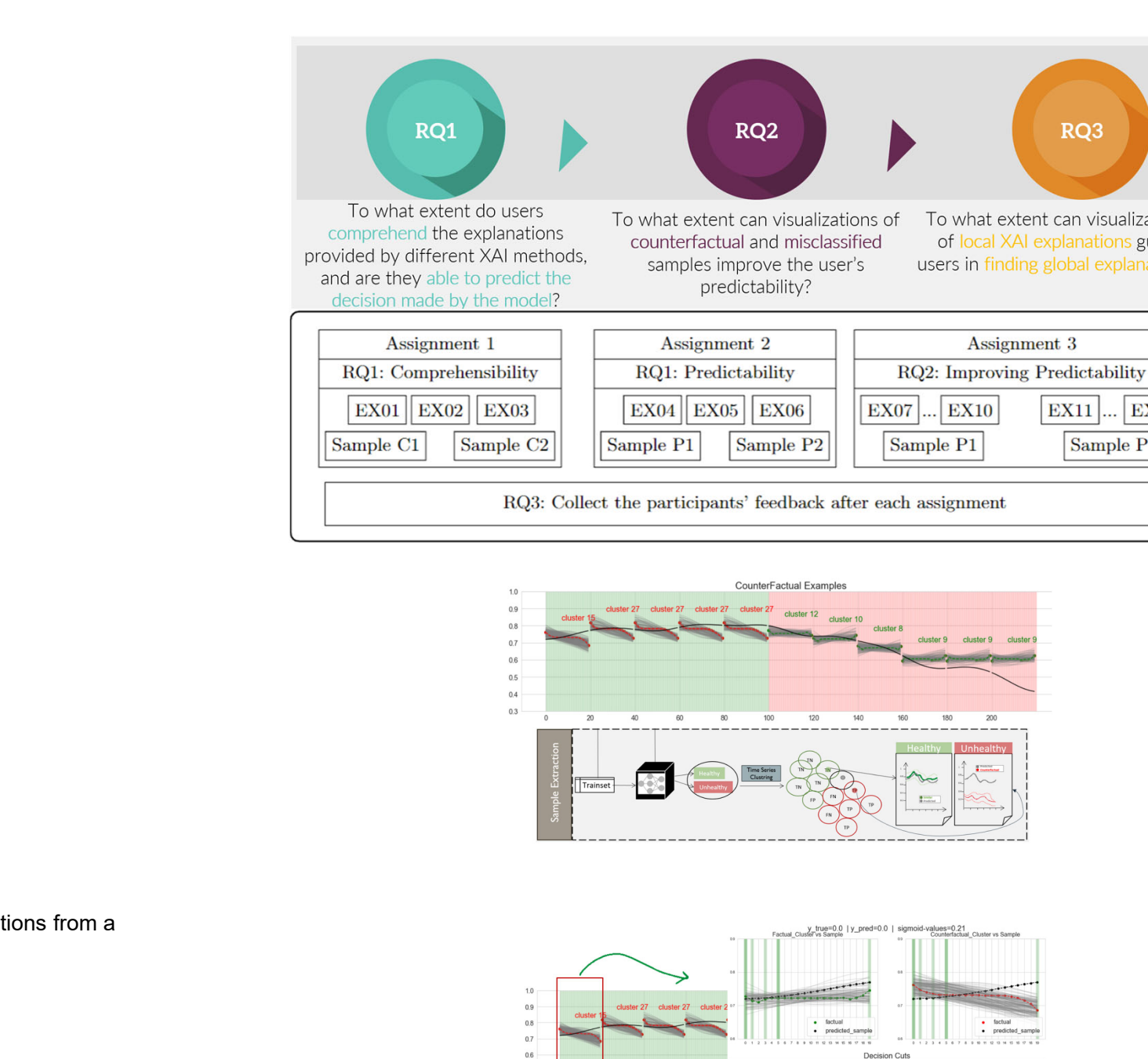
Customers: Lateral topic

Topic Goals:

- Identify influential feature on model prediction
- Assist developers and/or domain experts with boosting the model performance & increasing data quality
- Increasing system's interpretability

Topic Results:

- Visualizations of model agnostic & specific
 - locally explained influential features
 - globally explained influential features
 - Cohort explained influential features
- A user-centric XAI Evaluation setup
- Interactive environment for experts to extract local & global explanations from a trained model



Green Data Science

Topic-Lead: Dr. Jasmin Lampert
Senior Scientist

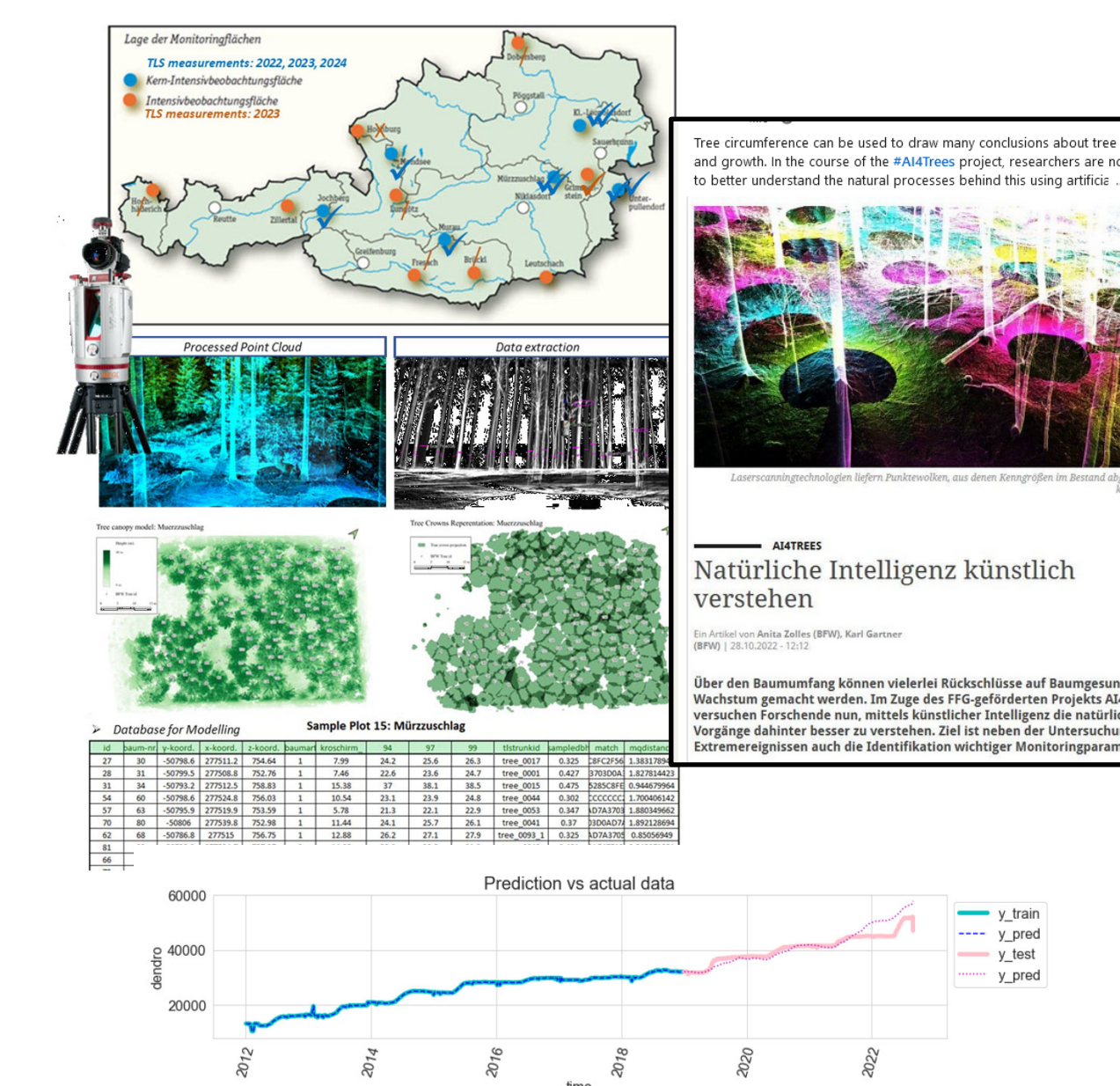
Customers: Umweltdata, GeoSphere Austria, GeoVille, GRAV

Topic Goals:

- AI and Data Science methods for tackling climate change
- Making AI algorithms computationally more efficient
- Development of physics-informed machine learning framework for weather and climate predictions

Topic Results:

- Explainable AI models for predicting tree growth
- Data-driven prediction of vermin occurrence
- Susceptibility maps for shallow landslides
- Data quality assurance for environmental sensors



Network monitoring and analysis

Topic-Lead: Dr. Pedro Casas
Senior Scientist

Customers: Telecommunications equipment manufacturer

Topic Goals:

- Design and develop a machine-learning based system for end-to-end monitoring of encrypted streaming traffic

Topic Results:

- Machine learning models to predict occurrence of streaming degradation in encrypted traffic
- Machine learning models to predict user watching and playback behavior in encrypted traffic
- Open software-based monitoring solution for monitoring of encrypted network traffic
- Improvement of network management capabilities under encrypted network traffic scenarios

