

# Pavol Mulinka

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 [Web of Science](#)  [Orcid](#)  [Scopus](#)

**Current role** Cyber Security Data Analyst (freelancer) at Forescout and Data scientist (Researcher) at CTTC, Barcelona/Castelldefels

**Experience** Analytics, Networking, Cyber Security, Data Analysis, Artificial Intelligence, Sustainability, Machine Learning, Telecomm...

**Technologies** SQL, Python, BigQuery, Kubernetes, Linux, PyTorch, AWS, Scikit-Learn, Bash, Cisco, Spark, Kafka, Elasticsearch, Hive

## Right now I'm learning...

More about the deployment of ML/AI on edge using Kubernetes, Kubeedge with MLflow(MySQL, Minio), Kserve (Istio, Knative) and monitoring CPU/GPU/RAM usage in Kubernetes using Prometheus and Kepler.

## Work experience

### Cyber Security Data Analyst (freelancer), [Forescout](#)

Sep 2024 - Present (2m)

Provides network security and device visibility solutions.  
Analytics · Networking · Cyber Security · Data Analysis

SQL Python BigQuery

- Analyzed and classified data from diverse security tools and systems
- Detected patterns, anomalies, and potential security threats
- Researched and applied machine learning methods (NLP, LLM, statistics) to enhance and enrich solution outputs

### Data scientist (Researcher), [CTTC, Barcelona/Castelldefels](#)

Nov 2020 - Present (3y 11m)

Artificial Intelligence · Sustainability · Machine Learning · Telecommunications

Kubernetes Python Linux PyTorch

- Developed machine learning models for pattern and anomaly detection in synthetic and real-world data
- Designed NLP, LLM, and AIoT solutions
- Created orchestrated (Kubernetes) solutions for batch and distributed computations
- Oversaw server, server cluster, lab, and website administration

### Python programmer (freelancer), [Assetario, Bratislava](#)

Mar 2021 - Jan 2024 (2y 10m)

Artificial Intelligence · Gaming · Machine Learning · Data Analysis

AWS Python Scikit-Learn

- Developed machine learning models to predict customer lifetime value (CLTV/PLTV) in mobile apps.
- Implemented machine learning algorithms for an in-app purchase recommendation system.

- Made per client specific SQL queries for data analysis and model implementation

**Python specialist (freelancer), SEAS, Bratislava** 

Jun 2020 - Oct 2020 (4m)

Python Bash Linux

- Developed communication interface between Slovak Electricity Hydro optimization model and user GUI.
- Utilized Docker to containerize solution with Redis for in-memory database, Flask web framework, and Celery for multi-processing.
- Implemented code unit testing, procedural-to-object-oriented transformation, and code refactorization.


**F5 loadbalancer specialist (freelancer), Oksystems, Prague** 

Jun 2020 - Oct 2020 (4m)

Consulting

Bash Linux Cisco

- Migrated Apache XML firewall/load balancer to F5 for Ministry of Agriculture project
- Designed and configured F5 iRules
- Conducted solution testing

**Data scientist, Nil, Tokyo, Japan** 

Mar 2019 - Oct 2019 (6m)

Artificial Intelligence · Machine Learning · Telecommunications

Python Linux Spark

- Utilized unsupervised machine learning to analyze MAWI and Darknet network traces.
- Improved hierarchical density-based clustering for interpreting network measurements at AIT Vienna internship.
- Optimized PySpark ML scripts for efficient execution on a distributed UX server.

**Data scientist, 02 Telefonica, Barcelona, Spain** 

Nov 2018 - Mar 2019 (3m)

Artificial Intelligence · Machine Learning · Telecommunications

Python Linux Spark

- Analyzed the relationship between customers' socioeconomic status and network performance.
- Explored potential discriminatory practices in network deployment and management.
- Used GIS tools such as QGIS, ArcGIS, and GeoPandas to correlate LSOA database with operator measurements in a distributed PySpark environment.

**Data scientist, AIT, Vienna, Austria** 

Mar 2018 - Sep 2018 (6m)

Artificial Intelligence · Machine Learning · Telecommunications

Python Kafka Elasticsearch Bash Linux Spark PyTorch Hive

- Conducted cybersecurity and network performance analysis with a focus on anomaly detection.
- Applied diverse machine learning approaches (supervised, unsupervised, batch, stream-based) to analyze extensive network measurement datasets like MAWI and Cloud latency.

- Integrated machine learning algorithms into big data analytics platforms, notably in the BIG-DAMA project within a distributed computing setting.
- Utilized distributed computing tools and platforms including Cloudera, PySpark, Apache Pig, Hive, Kafka, and Elasticsearch.
- Executed and configured machine learning bash scripts on a Linux server.

#### Previous positions, Various

Aug 2007 - Mar 2018 (10y 7m)

Bash Linux Cisco

- Worked as a Network Engineer at VSHosting in Prague, Czech Republic
- Provided network consulting services as a Network Consulting Engineer at Verizon in Prague, Czech Republic
- Served as a Senior System Engineer at AT&T in Bratislava, Slovakia
- Specialized in HP Radia at Soitron in Bratislava, Slovakia
- Offered support as an HP Monitoring Support Specialist at Soitron in Bratislava, Slovakia
- Worked as an IT VoIP support specialist at Soitron in Bratislava, Slovakia

## Education

#### Faculty of Electrical Engineering at Czech Technical University in Prague, Czech rep.

Nov 2013 - May 2021 (7y 6m)

PhD Telecommunications

- Hierarchical density-based clustering and interpretation for network measurements.
- The aim was to detect and interpret unknown patterns in passive/active network/Cloud measurements by hierarchical density-based unsupervised machine learning techniques.

#### Faculty of Electrical Engineering at Slovak Technical University in Bratislava, Slovakia

Sep 2004 - Jul 2009 (4y 10m)

Bc/Ing (Masters) Telecommunications

- Bc.: Measurement of glottal period of human voice
- Measurement, automatic marking and analysis of glottal period of human voice
- Ing.(Masters): Classifiers for identification of the speaker
- Building on top of the Bc. results by identification of speakers by glottal period and other aux. features

## Snippets

#### Collaborator(pytorch-widedeep) @ [github.com](https://github.com)

Collaboration on open source deep learning library pytorch-widedeep.

#### External collaborator/Volunteer @ [github.com](https://github.com)

Collaboration on Data Science related tasks under the username Pavol86, please see the Phabricator tickets and related git merges.

#### Researcher @ [success-6g-project.cttc.es](https://success-6g-project.cttc.es)

Researcher in project SUCCESS-6G: Towards robust, secure and computationally efficient vehicular services in 6G.

**Researcher** @ fireman-project.eu

Researcher in a project FIREMAN (Framework for the Identification of Rare Events via Machine learning and IoT Networks).

## More about me

### I'm making a career change because...

I want to focus more on productionalization of solutions to problems and topics that I am passionate about.

### Interests

climbing/bouldering(outdoor/indoor), motorcycles, ceramics/pottery, nature (hiking/trail running)

### Right now I'm learning...

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### Languages

English, Spanish, Czech, Slovak