DR. TECHN. FARES MEGHDOURI

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WORK EXPERIENCE

Kapsch TrafficCom, Vienna January 2023 - Present
Machine Learning and Software Engineer

Design, training and evaluation of ML solutions, License plate recognition systems, Windshield blurring, CI/CD and Software Development.

Skills: Deep learning, Computer vision, Agile methods, CI/CD, C++ and Python.

TTTech, Vienna April 2018 - April 2019
Project Engineer

Build Configuration Management, CI/CD, Software Release Tool, Automation. Build Configuration Management, CI/CD, Software Release Tool and Automation. Skills: Agile methods,CI/CD, Python, Django, Jenkins.

EDUCATION

Technical University of Vienna *October 2018 - September 2023*
PhD, Research in Applied machine learning for Network Security. Project engineer in various industrial projects related to applying ML for security purposes. Dealing with big network data. Design, development and evaluation of deep learning models focusing on feature engineering.

Thesis title: Feature Engineering and Model Optimization for Machine Learning-based Network Traffic Classification

Technical University of Vienna *October 2016 - July 2018*
Master of Engineering (Dipl.-Ing.), Degree: 1

Thesis title: Comparison of Feature Sets for Machine Learning-based Network Anomaly Detection

Technical University of Algiers *September 2015 - July 2016*
Master of Engineering, Telecommunication.

Technical University of Algiers *September 2012 - July 2015*
Bachelor of Engineering, Telecommunication Networks and Multimedia. Degree: 1

CARRIER OBJECTIVE

Working in an environment that provides me the opportunity to improve my skills and knowledge, growing along with the organization's objective.

EXPERIENCE

Machine/Deep Learning
Design, conception, and implementation of multiple ML/DL architectures for intrusion detection, data

augmentation, and classification, including generative models, recurrent architectures and reinforcement learning.

MLOps
DeepLearning.AI/Google specialization certificate on ML solutions design in practice including scoping, data collection, modeling, deployment and serving.

Data Science
Big data and data mining. Experience with various analysis tools, databases, software and statistical methods.

Networking
Network design, configuration, and management.

PROJECTS

Denoising and Gradient Removal Tool
The development of a RCNN-based tool for noise reduction and light pollution gradient removal from images using recurrent convolutional neural networks.

Home Condition Monitoring
An ESP-based logger for monitoring home temperature, humidity, CO2, and TVOC levels, as well as CH4. Data processed on the cloud.

Smart Home Monitoring
Design and conception of an intelligent monitoring system that can contact the owner in an emergency. It monitors movement, temperature, and many other conditions.

Freelancing Web Platform
Complete engineering and development of a freelancing platform to help job seekers find an optimal offer. It also helps organizations find the right person to get the best quality work done. The back-end deploys DL for the best match.

Secure Distance Learning
A collaborative project for developing and building a platform allowing students (initially TU Wien) to study remotely. The initiative started to cope with current world health conditions (COVID-19 pandemic).

TECHNICAL STRENGTHS

Data Science	Machine and Deep Learning, Data Mining (Supervised/Unsupervised/ Reinforcement Learning, Generative Models, Transformers), Relational/Non-Relational Databases (Hadoop, mySQL, Postgres), TFX, TFDV, TFServing, TFT.
OS	Linux, Windows, MacOS.
Technical	Python (Pytorch, Keras, TF, Pandas, Sklearn, Pandas, Numpy etc.), C++, GoLang, SQL, AWS, GCP, CI/CD, Docker, Kubernetes, Jenkins, Web Dev. (JavaScript, CSS, Flask, Django), Swift/SwiftUI.
Softskills	Agile/Scrum, Jira, Confluence.

PUBLICATIONS

CCgen: Injecting Covert Channels into Network Traffic
May, 2022. A software for manipulating network traffic packets.

Modeling Data with Observers
IDA Apr, 2022. An extremely fast algorithm for big data compression.

Shedding Light in the Tunnel: Counting Flows in Encrypted Network Traffic
ICDM Dec, 2021. LSTMs for flow counting in encrypted VPN tunnels.

Controllable Network Data Balancing with GANs
NIPS Dec, 2021. Data balancing and controllable generation with GANs.

Anomaly Detection for Mixed Packet Sequences
LCN Nov, 2020. LSTMs and attention for network anomaly detection.

Cross-Layer Profiling of Encrypted Network Data for Anomaly Detection
DSAA Oct, 2020. Feature engineering for attack detection.

EagerNet: Early Predictions of Neural Networks for Computationally Efficient Intrusion Detection
Jul, 2020. A modification to DNNs for fast predictions at earlier layers.

SparseIDS: Learning Packet Sampling with Reinforcement Learning
Jan, 2020. RL/AC for network packet sampling.

Analysis of Lightweight Feature Vectors for Attack Detection in Network Traffic
Jan, 2018. Comparison of feature sets anomaly detection.

LANGUAGES

German - Fluent

English - Fluent

French - Mother language

Arabic - Mother language

PERSONAL TRAITS

Highly motivated and eager to learn new things.

Ability to work as an individual as well as in group.

Strong motivational and leadership skills.