## **AYDIN JAVADOV**

#### PhD Candidate at ETH Zurich

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### **EXPERIENCE**

## PhD Candidate & Research Assistant in Data Science

#### **ETH Zurich**

Mov 2024 - Present

**♀** Zurich, Switzerland

Supervised by:

Prof. Dr. Bjoern Schuller

(GLAM @ Imperial College London & CHI @ TUM)

Prof. Dr. Florian von Wangenheim

(Mobiliar Lab for Analytics @ ETH Zurich)

Focusing on: Large Language Models, Reinforcement Learn-

ing, Explainable Al

## Machine Learning Engineer Working Student **BMW Group**

## Apr 2023 - May 2024

Munich, Germany

Focusing on: Large Language Models, Time Series Analysis, Graph Representation Learning, Explainable Al

### **Master Thesis:**

## Explainable AI for Graph Representation Learning and

Clustering Algorithms

#### **BMW Group**

₩ Oct 2022 - Apr 2023

Munich, Germany

Technologies: Python, Pytorch, AWS, Git

Graded: 1.0 (German System)

#### Guided Research:

Explainable AI and Computer Vision for Clinical Decision Support in Dermatology

**Technical University of Munich,** 

**Chair of Computational Imaging and Inverse Problems** 

## Apr 2022 - Nov 2022

The subject of this project is the understanding and implementation of several interpretability techniques for deep learning models for skin lesion classification, in computer vision context. The work was on the theme of human-centered explainable AI and involved close collaboration with Munich University Clinic physicians.

## Data Science Working Student novuter GmbH

- Extracted raw data and transformed the data stories on different domains (e.g. finance) to optimize the decision making.
- Created business related data stories for Digital Assistant in www.novuter.com with SQL

Technologies: PostgreSQL, JavaScript, Python, R

## Artificial Intelligence Intern ATL Tech - Al Lab

₩ Oct 2019 - Feb 2020

**♀** Baku, Azerbaijan

 Took part in the Advanced research of Speech recognition in Dialog Systems for Azerbaijani Language

Technologies: Python, pandas, numpy

# Mars Academy- Engineering, Robotics and Programming instructor

### **Mars Academy**

## August 2018 - August 2019

- Taught Python to primary and high school students.
- Taught basic Engineering techniques concerning Arduino UNO.

Technologies: Python, Arduino UNO, Lego Mindstorms EV3

### **EDUCATION**

## PhD Candidate in Data Science ETH Zurich

Movember 2024 - Present

# M.Sc in Data Engineering & Analytics (Distinction)

### **Technical University of Munich**

math April 2021 - July 2024

German Grade: 1.5 (Top 15%)

## B.Sc (Exchange Student) in Computer Science

## Korean Advanced Institute of Science and Technology

## Feb 2018 - June 2018

# B.Sc in Computer Engineering (Distinction) ADA University

## Sept 2016 - June 2020

German Grade: 1.1 (Top 5%)

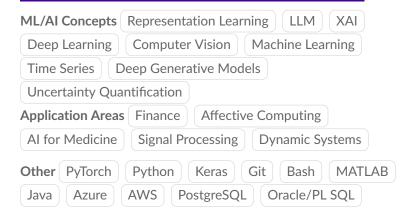
### **PUBLICATIONS**

- "BioSyncHRI: Synchronizing Human Robot Interaction via Real-Time Biosignal Adaptation", Workshop in Envisioning the Future of Interactive Health, CHI'25, Yokohama, Japan.
- "Approximation of CIEDE2000 color closeness function using Neuro-Fuzzy networks", Applied Intelligence, Volume 51

https://link.springer.com/article/10.1007/s10489-021-02326-1

• The Playground, Math Horizons, 27:1, 30-33, DOI:10.1080/10724117.2019.1629214

### **TECHNICAL SKILLS**



## **LANGUAGES**

Turkish (native), Russian (native) Azerbaijani (native), English (fluent), German(elementary), Korean (beginner)

## **PROJECTS**

Guided Research:

Explainable AI for clinical decision support in dermatology

Technical University of Munich, Chair of Computational Imaging and Inverse Problems

## Apr 2022 - Nov 2022

The subject of this project is the understanding and implementation of several interpretability techniques for deep learning models for skin lesion classification. The results of this project will be presented to human physicians for analysis.

 • (winner) Hackaton HackaTUM:
 Technical University of Munich
 & Carl Zeiss AG (ZEISS)

₩ Nov 2021

Machine Learning and Software Engineering solution to offer the domain experts a tool to visualize the temperature data as well as detect and predict temperature fluctuations in microscopic data. The project selected as winner. More Info here: https://devpost.com/software/munichdortmund#

### **AWARDS & PARTICIPATIONS**

 1st Place in HackaTUM Hackathon Technical University of Munich

Movember 2021

Magna Cum Laude Honor and Diploma of distinction for graduation

**ADA University** 

August 2020

Dean's List of Honour and Merit-Based Scholarship

**ADA University** 

₩ January 2020

Rector's List of Honour and Merit-Based Scholarship named after Lotfi Zadeh

**ADA University** 

Ctober 2019

 Head Jury Certification at First Lego League (FLL) Competition

Ministry of Education of Azerbaijan Republic

Volunteer Organizer of 'Purple Comet' International Math Olympiad

**ADA University** 

Dean's List of Honour and Merit-Based Scholarship

**ADA University** 

聞 January 2019

Lego Official Trainee
 Lego Education

## February 2019

Global Korea Scholarship
 Ministry of Education of Korea Republic

## February - June 2018

Rector's List of Honour and Merit-Based Scholarship

### **ADA University**

Dean's List of Honour and Merit-Based Scholarship

### **ADA University**

Bachelor Thesis Project:

Advanced Research in Analytics with Machine Learning and Data Visualization of DTS Data of British Petroleum

#### **ADA University**

# Jan 2020 - Jun 2020

Dealt with data analytics, anomaly detection using several machine learning techniques (One-Class SVMs, Isolation Forests), time series analysis, interpolation techniques, and other various 3D visualizations. A fairly small portion of the work was published (see the link for pdf version (page: 463)):

https://www.bhos.edu.az/kcfinder/upload/files/Tezisler\_2020.pdf

 Practical Course Project:
 Explainable AI for Controllable Text Generation for German Language

#### **Technical University of Munich**

m Oct 2022 - Mar 2023

Motto & Motivation: To generate a simplification that best fits the user's needs, it can be important to adapt the amount or strength of simplification. Moreover, the user might highlight important passages that must be considered. In this project, we want to explore how control mechanism can be included into German simplification models.

Practical Course Project:
 Machine Learning in Crowd Modeling & Simulation

### **Technical University of Munich**

m Oct 2023 - Feb 2024

Motto & motivation was to learn about the core mechanics in human movement and interactions in crowds. The current state of the art in mathematical modeling has been be discussed along with practical exercises. As a reference, the crowd simulation software VADERE (www.vadere.org) was introduced. After this introduction to modeling of crowds, current machine learning approaches were discussed to analyze the simulated results, as well as experimental data. Techniques from statistics, dynamical systems theory, manifold learning, and numerical analysis are be introduced in short lectures, implemented by the students.