

## RESEARCH INTERESTS

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I am interested in the fields of deep learning, NLP and interpretability. I am motivated by complex real world problems that can benefit from the capabilities of deep learning. My previous research and projects include exploring how deep learning models learn, applying large language transformer models to machine generated and natural language data, and using deep learning models to solve complex protein interaction problems.

## EDUCATION

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- **Masters in Artificial Intelligence** August 2020 – July 2022  
*VU Amsterdam* *Amsterdam, Netherlands*
  - Selected Coursework: Experimental Design and Data Analysis Knowledge Representation, Multi Agent Systems, and NLP Technologies
- **Bachelors of Science in Computer Engineering** August 2014 – June 2019  
*Middle East Technical University* *North Cyprus, Turkey*

## PROJECTS AND PUBLICATIONS

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- **Auto-Encoder Knowledge Extraction for Anomaly Detection Task:** Using co-activation graphs to represent knowledge learned by auto-encoders during training (ACM K-CAP conference 2021).
- **Exploration of Deep Learning Models for Integrating Log Data in Maintenance Classification:** Transformer based deep learning models were used to combine human and machine generated to perform predictive maintenance and diagnosis of medical devices.
- **Boolean Logic Ensemble Method:** Classifying datasets with nested categories, by using ensemble classifiers with logic from ontologies, to overcome small training set size.
- **Can It Drive (CID):** Created and tested a distributed modular self-driving system for use in virtual game environments. System components were designed to run in parallel on different networked computers in order to overcome hardware limitations.

## EXPERIENCE

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- **ING** September 2022 - Present  
*Data Scientists* *Amsterdam, Netherlands*
  - Designing a churn prediction system for evaluating the likelihood of customers leaving ING services.
- **Philips** January 2022 - July 2022  
*AI for Language Research Intern* *Eindhoven, Netherlands*
  - Developed novel transformer based language models for log data generated by medical devices for down stream predictive maintenance and diagnostic tasks.
  - Experimented with combining natural language information with machine generated data in order to generate a better representation of maintenance problems.
  - Facilitated social and career events for the intern community at Philips as a board member of the Philips Intern Committee.
- **VU Amsterdam** November 2021 - July 2022  
*Research Assistant* *Amsterdam, Netherlands*
  - Developed custom bioinformatic data processing pipelines for the task of epitope (protein-protein interaction) prediction.
  - Experimented with using coactivation graphs on transformer based model (OPUS-TASS) for interpretability.
- **OneByte** September 2019 - December 2021  
*Data Scientist* *Remote Work*
  - Developed machine learning and rule based back-end systems for identifying urgent findings and organ-specific abnormalities in patient screening and monitoring systems.
  - Developed SpaCy based natural language models for entity linking, recognition and extraction from medical documents.

- Developed a natural language model to map medical procedure names from different hospitals to a standardized lexicon.
- Implemented a pipeline for model assessment by medical experts. The pipeline included monitoring system that provides an overview of expert feedback and progress.
- Developed a deep learning model for muzzle print identification of cattle using computer vision and few shot learning.

- **Paitoo**

February 2019 - September 2019

*Machine Learning Engineer*

*Lahore, Pakistan*

- Developed a recommendation engine for food centered social media app.
- Developed an ensemble based hierarchical image classification model to automatically classify dishes in Paitoo database.
- Developed, tested and maintained a system to identify and rank trending restaurants and items within the app.
- Increased customer retention and satisfaction by providing key insights and analysis on user behavior.

## SKILLS

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- **Proficient with:** Python - SkLearn - OpenCV - Pandas - TensorFlow - Git - Pytorch - Elastic Search - Linux - Pytoch - Spacy - AllenNLP
- **Have Knowledge of:** C++ - IoT Technology - C# - Azure - AWS - GCP - SQL