Daniyal Selani

Email: daniyal.9538@gmail.com
Phone: +31685681702
github.com/daniyal9538

Research Interests

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

- **Masters in Artificial Intelligence** — August 2020 – July 2022
  VU Amsterdam — *Amsterdam, Netherlands*
- **Bachelors of Science in Computer Engineering** — August 2014 – June 2019
  Middle East Technical University — *North Cyprus, Turkey*

Projects and Publications

- **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**: Developing and evaluating novel transformer based language models for downstream medical device maintenance and diagnosis.
- **Boolean Logic Ensemble Method**: Hierarchical categories with a novel boolean logic ensemble classifier to overcome dataset limitations.
- **Can It Drive (CID)**: Modular self-driving system for use in virtual environments.

Experience

- **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 for predictive maintenance and diagnosis.
  - 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 novel data pipelines to feed deep learning transformer based models 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 back-end systems for identifying actionable 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 custom Prodigy based pipelines for model assessment by domain experts. The pipeline also 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.
  - Provided data driven insights about user behavior, to increase customer retention and satisfaction.

Skills

- **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

Selected Coursework

- Machine Learning
- Artificial Intelligence
- Experimental Design and Data Analysis
- Knowledge Representation
- Socially Intelligent Robotics
- Evolutionary Computing
- BioInformatics
- Multi-Agent Systems
- Data Mining
- NLP Technologies
- Machine Learning and Reasoning for Healthcare