Omer Veysel Cagatan

https://asparius.github.io Istanbul,Turkey

Personal Statement

I am primarily focused on making Deep Learning accessible to a global audience by developing efficient data-driven agents and language models. My main area of interest is at the crossroads of Deep Reinforcement Learning, Representation Learning, and Natural Language Processing. Moreover, I hold a deep fascination and curiosity for various subdomains within the realm of Deep Learning.

Education

Koc University, Sarıyer, Istanbul Oct 2020-Present
Bachelor of Science Graduation: June 2024
Major: Computer Engineering
Tracks: Artificial Intelligence, Data Analytics
GPA: 3.75/4.0

Research Experience

Data-Efficient Deep Reinforcement Learning with Asst. Prof. Baris Akgun June 2023-Present
Working on Data-Efficient Reinforcement Learning. My primary aim is to utilize representation learning methods to make more efficient agents.

- Led the BarlowRL project which has been accepted into the ACML 2023. After success of the BarlowRL, we further explored the impact of different non-contrastive objectives in the SPR which is the baseline of state-of-the-art value-based agents. We shared our detailed investigations in "On the Effectiveness of Non-Contrastive Objectives in Data Efficient Reinforcement Learning" article.

Non-Contrastive Sentence Embeddings with Prof. Deniz Yuret and Prof. Alper Erdogan Nov 2022-Mar 2023
Worked on developing state-of-the-art sentence embedding models which are created after fine-tuning with non-contrastive objectives.

- Led this project which aimed to enhance BERT embeddings by fine-tuning it with non-contrastive objectives such as CorInfoMax and VICReg.

Sentiment Analysis in Turkish with Assoc. prof. Alptekin Kupcu July 2022-Oct 2022
Worked on developing state-of-the-art Sentiment Analysis models in Turkish.

- Collected and curated a large dataset to obtain the best performant model. Lastly, wrote a comprehensive literature review about Sentiment Analysis in Turkish and the results of the findings from different languages employed in Turkish.

Teaching Experience

Teaching Assistant for the ENGR200, Probability and Random Variables Oct 2022-Jan 2023.
Tutor for the MATH204, Differential Equations Feb 2022- June 2022

Other Experience

SPARK Autonomous Car Feb 2022-June 2022
Worked as a Computer Vision Engineer in the Software Team.

- SPARK is a autonomous vehicle Team that builds a car from scratch for the national competition. My primary work was the training of the Lane Detection System.

Awards

Vehbi Koç Scholar
Anatolian Scholarship Program

Skills

Programming: Python, C, C++, Java, LaTeX
Deep Learning: Pytorch, Flax/Jax.

Publications

Peer Reviewed Conferences

Anonymous. Submitted to The 18th Conference of the European Chapter of the Association for Computational Linguistics (EACL '24). Under Review.

O. V. Cagatan and B. Akgun. *On the Effectiveness of Non-Contrastive Objectives in Data Efficient Reinforcement Learning*. Submitted to Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI '24). Passed first phase. Under Review.

O. V. Cagatan and B. Akgun. *BarlowRL: Barlow Twins for Data-Efficient Reinforcement Learning.* To appear in the Asian Conference on Machine Learning, 2023 (ACML '23)

Workshops and Shared Tasks

O. V. Cagatan. *ToddlerBERTa: Exploiting BabyBERTa for Grammar Learning and Language Understanding.* To appear in the CoNLL–CMCL 2023 Shared Task: The BabyLM Challenge (CONLL'23).