

Tolga Recep Uçar

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EDUCATION

Yıldız Technical University

Bachelor of Science in Mathematics: GPA: 3.16/4.00

Aug 2020 - Present

Istanbul, Turkey

- Relevant Courses: Linear Algebra, Probability and Statistics, Computer Programming, Operations Research (Decision Theory, Network Analysis, Markov Chains), Linear Programming, Mathematical Analysis, Number Theory, Pure Mathematics, Differential Equations
- Expected Graduation Date: Jun 2024

EXPERIENCE

Undergraduate Researcher

STAR Research Program, Yıldız Technical University

Jun 2022 - Present

Istanbul, Turkey

- Working on Transformer based and LSTM based Variational Autoencoders under the supervision of Assoc. Prof. Mehmet Fatih Amasyali.

Python Tutor

Kodland

Oct 2022 - Present

Istanbul, Turkey

- Teaching students of age 10-11 basics of Python and introducing them to programming.

RESEARCH INTERESTS

- Representation and Transfer Learning
- Interpretability, Alignment, Safety
- Generative Models (GANs, VAEs etc.)

WORK

Code for our research on VAEs

- Two alternative VAE architectures were implemented for our research at Yıldız Technical University:
<https://github.com/tolgarecep/Transformer-VAE>

Turkish translation of Interpretable ML by Christoph Molnar

- Machine learning has great potential for improving products, processes and research. But computers usually do not explain their predictions which is a barrier to the adoption of machine learning. This book is about making machine learning models and their decisions interpretable.

TECHNICAL SKILLS

Languages: Python, R, Java, HTML, CSS

Machine Learning: Pytorch, HuggingFace, Captum, Tensorflow, Scikit-learn

Data Science: Pandas, NumPy, Matplotlib, Seaborn

Miscellaneous: Git, TensorBoard, GNU Octave, LATEX

WRITINGS (ALL AVAILABLE ON MY WEBSITE)

Can right facial cues reveal political orientation?

- This interesting research combining psychology and computer vision asks the question "Can machines learn political orientation from face images of people?" It turns out that when right descriptors are extracted, and fed into a simple classification algorithm, a pretty great estimation of political orientation from face images is possible.

Interpreting neuroscientific models with DeepTune

- DeepTune framework provides rich, concrete and naturalistic characterizations of V4 neurons that refine significantly findings of previous studies. The process is to simply visualize by optimization (optimizing input image for maximal network output), once neuroscientific demands are all settled.

Remote Monuments

- "I will call the attention of the crowd to their own ruination. And if they don't want to see it willingly, I shall make them see it by fair means or foul. Please understand me — or, at least, do not misunderstand me. I do not intend to beat them... I will force them to beat me. Thus I actually compel them. For if they begin to beat me, they will probably pay attention; and if they kill me, they most definitely will pay attention, and I shall have won an absolute victory." - Kierkegaard, The Diary of Søren Kierkegaard