Ilyana Anderson

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Education

The University of Texas at Austin 2022 – 2024
M.S. in Computer Science, GPA: 4.0 *Austin, TX*
Coursework: Deep Learning, Advanced Operating Systems, Natural Language Processing, Android Programming, Online Learning and Optimization, Advanced Linear Algebra for Computing, Machine Learning, Case Studies in Machine Learning, Optimization, Reinforcement Learning.

University of Houston 2015 – 2017
Coursework for the Ph.D. program in Chemistry was completed without obtaining the degree, GPA: 3.835 *Houston, TX*

Lomonosov Moscow State University 2006 – 2012
B.S. and M.S. in Geology, With Honors *Moscow*

Technical Skills

Programming Languages: Python, C, SQL, MATLAB
Frameworks and Libraries: PyTorch, NumPy, Pandas, Matplotlib, Fastai, Hugging Face Transformers, Scikit-Learn
Version Control: Git

Project Experience

Prediction of Nucleotide Reactivity at Each Position in RNA Molecules: I used a customized transformer architecture to predict two types of reactivity at each position of RNA molecules as part of the Stanford Ribonanza RNA Folding competition on Kaggle. I experimented with rotary and sinusoidal embeddings for encoding positional information, as well as with feature design. My solution placed in the top 8% of the contest submissions.
Exploration of Methods to Remove Bias From LLMs Fine-Tuned on Natural Language Inference Task: To reduce bias, I developed two novel approaches and implemented the DRiFT method reported in the literature. Most of the enhanced models demonstrated improved performance on the HANS dataset compared to the baseline, suggesting a potential reduction in bias.
Development of a Neural-Network-Based Agent to Play SuperTuxKart Ice Hockey: I implemented imitation learning and DAGGER algorithms within a team project. The team selected my agent design as the basis for further experimentation. This agent placed second in a class-wide competition.

Work Experience

The University of Texas at Austin, Computer and Data Science Online 2024 – Present
Learning Facilitator for Natural Language Processing (NLP) *Remote*
- Responded to students' questions on the discussion board, explaining course concepts and assignments.
- Conducted office hours to facilitate real-time student support, including help with debugging and code-related issues.
- Collaborated with the professor to improve course content, providing feedback on instructional materials and developing exam questions.

Magoosh 2019 – 2021
Remote Test Prep Expert *Remote*
- Provided academic support across multiple standardized tests including MCAT, LSAT, GRE, and GMAT.
- Offered tailored problem-solving strategies and facilitated effective test preparation.

University of Houston, Chemistry Department 2015 – 2017
Teaching Assistant (TA) *Houston, TX*
- Led chemistry labs through brief instructional lectures, hands-on supervision, and student support.

Publications (Crystallography)

Other names: Derkach, Shagivaleeva

[1] E. L. Belokoneva, **I. K. Derkach**, and O. V. Dimitrova, "Crystal structure of a new variety of lead dodecaborate $Pb_6(Li_{0.65}Na_{0.19})[B_{12}O_{24}]I_{0.84} \times 0.168H_2O$ and its comparison with beryl and cordierite," *Crystallography Reports*, vol. 58, no. 3, pp. 416–421, 2013.

[2] E. L. Belokoneva and **I. K. Shagivaleeva**, "Topology and symmetry analysis of the $Sr_2VO(VO_4)_2$ family exhibiting magnetic properties and prediction of structures with different orderings of vanadyl bonds," *Crystallography Reports*, vol. 57, no. 3, pp. 369–374, 2012.

[3] E. L. Belokoneva, **I. K. Shagivaleeva**, O. V. Dimitrova, and N. N. Mochenova, "New layer borate $(Nd_{0.925}Na_{0.075})Nd[B_9O_{15}(OH)_2]Cl_{0.85} \times 2.65H_2O$ and its place in the structural systematics," *Crystallography Reports*, vol. 55, no. 5, pp. 753–759, 2010.

Certificates (MOOCs)

Probability - The Science of Uncertainty and Data (MITx)