Ilyana Anderson

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Education

The University of Texas at Austin — Jan. 2022 – Present
M.S. in Computer Science, GPA: 4.0 — *Austin, Texas*
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

University of Houston — 2015 – 2017
Ph.D. program in Chemistry, coursework completed without obtaining the degree, GPA: 3.835, GPA units: 18 — *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, Scikit-Learn
Version Control: Git

Project Experience

Prediction of Nucleotide Reactivity at Each Position in RNA Molecules: I used 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, as well as feeding different types of sequence-related data (features) into the decoder part of my models. My solution placed in the top 8% of 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 relative to the baseline results, suggesting a potential reduction in bias.

Development of a neural-network-based agent to play SuperTuxKart ice hockey: The focus of my work within a team was to implement imitation learning and dagger algorithms. The team selected my agent design as the basis for further experimentation. This agent placed second in a class-wide competition.

Work Experience

Magoosh — 2019 – 2021
Remote Test Prep Expert — *Remote*

- Provided academic support across multiple standardized tests including MCAT, LSAT, GRE, and GMAT.
- Clarified complex subjects and offered tailored problem-solving strategies.
- Ensured comprehension through adaptive explanation methods and facilitated effective test preparation.

University of Houston, Chemistry Department — 2015 – 2017
Teaching Assistant — *Houston, TX*

- Facilitated chemistry labs through brief instructional lectures, hands-on supervision, and student support.
- Graded lab reports.

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)

CS50's Web Programming with Python and JavaScript (HarvardX)

CS50's Introduction to Computer Science (HarvardX)