Victoria Valeeva

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EXPERIENCE

Research Assistant
4 May 2021 — Present

Rauscher Lab, University of Toronto — *Mississauga, Canada*

- Conceptualizing and testing dimensionality reduction methods for protein simulation data to increase interpretability
- Performing quantitative and qualitative analyses of a dimensionality reduction method based on variational autoencoders
- Building Markov models of protein simulations to discover the underlying dynamics
- Utilizing the University's high-performance computing resources (Niagara and MIST) to train neural networks and run extensive protein simulations

Computer Assembly Technician
27 July 2020 — 21 August 2020

ICL Techno — *Kazan, Russia*

- Implemented a new assembly system, that improved manufacturing performance by 28%
- Created a simulation of assembly on the transporter in C++ and Python to quantify the analysis
- Assembled over 250 laptops and PCs daily for families in need and retailers
- Prepared and sorted over 500 hardware components daily necessary for assembly

3D Artist
15 June 2020 – 15 July 2020

SoyuzKhimPromProekt — *Kazan, Russia*

- Produced high-quality renders of 5 civil engineering projects at the growing petrochemical facility in Nizhnekamsk
- Created a software add-on for Blender 3D in Python to automate building generation
- Utilized Blender API for fast modeling of paneled surfaces, reducing production time by 35%
- Resolved a software migration issue to produce renders by leveraging the properties of complex FBX models

PROJECTS

Research on Numerical Methods
January 2020 – April 2020

- Conducted comparative analysis of Euler, Euler-Richardson, Verlet, and Runge-Kutta methods, helping to determine the most suitable method for scientific simulation problems
- Developed simulations of physical phenomena in Java to attain quantifiable properties of the methods
- Applied linear regression to approximate relative error functions

lobach.net
October 2020 – Present

- Developed a Timetable web application for a lyceum (upper-secondary school)

TALKS AND POSTERS

UToronto Mississauga Smarti Gras 2021 - Searching for Conformational States in the Dynamics of Protein Crystals

UToronto Mississauga SURF 2022 - Decoding Protein Dynamics with Machine Learning

AWARDS

UTM Undergraduate Research Grant
2022

- Grant by University of Toronto Mississauga to support undergraduate research

University of Toronto International Scholar
2021

- Scholarship of *180.000 CAD* for undergraduate studies

Finals of International PhysTech Olympiad in Physics
2021

- prize-winner, top 1%, over 12 thousand participants worldwide

EDUCATION

University of Toronto
Canada

Exp. Honours Bachelor of Science - HBSc, Specialist in Mathematics, Cumulative GPA: 4.0 — *2021 - 2025*