

Victoria Valeeva

EDUCATION

University of Toronto

Honours Bachelor of Science – Applied Statistics

2021 – 2025

Canada

EXPERIENCE

Research Assistant

Under supervision of Dr. Duncan Dauvergne

May 2023 — August 2023

Toronto, Canada

- Studying and conceptualizing new stochastic epidemic models
- Proving results for multi-particle diffusion limited aggregation models

Teaching Assistant: MAT135/136

University of Toronto

September 2022 — Present

Mississauga, Canada

- Lecturing, conducting office hours, preparing class materials/tutorials/tests/exams, grading assignments/exams.

Research Assistant

Rauscher Lab, University of Toronto

May 2021 — Present

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

3D Artist

SoyuzKhimPromProekt

June 2020 – July 2020

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 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

TALKS AND POSTERS

UToronto Mississauga SURF 2022 - Decoding Protein Dynamics with Machine Learning

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

AWARDS

University of Toronto Excellence Award

2023

- Award by University of Toronto to support supervised undergraduate research; Value: 7,500\$
- Supervised by Dr. Duncan Dauvergne

UTM Undergraduate Research Grant

2022

- Grant by University of Toronto Mississauga to support undergraduate research; Value: 500\$
- Supervised by Dr. Sarah Rauscher

University of Toronto International Scholar

2021

- Entrance scholarship for undergraduate studies; Value: 180,000\$

Finals of International PhysTech Olympiad in Physics

2021

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