

# Victoria Valeeva

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## EXPERIENCE

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### Research Assistant

4 May 2021 — Present

*Rauscher Lab, University of Toronto*

*Mississauga, Canada*

- Applying the concept of Markov chains to the analysis of biological macromolecules
- Using the Niagara supercomputer to run long-timescale simulations of protein crystals
- Utilizing clustering (Spectral, DBSCAN) and dimensionality reduction (PCA, UMAP) methods for data processing

### 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

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### 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

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

## AWARDS

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### 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

### National Olympiad in English Language

2021

- absolute winner, top 0.5% in Russia

### Canadian Senior Mathematics Contest

2020

- prize-winner, top 12 among 8394 participants worldwide

## EDUCATION

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### University of Toronto

Mississauga, Canada

*Exp. Honours Bachelor of Science - HBSc, Mathematics and Applied Statistics*

*2021 - 2025*

### Online School of Moscow Institute of Physics and Technology

Moscow, Russia

*Advanced courses in Physics, GPA 4.95 / 5.0*

*September 2019 - May 2021*