Uran Maimekov

CV/Resume

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UranMai

Research Interests

Bioinformatics, Structural biology, Genetics, Machine Learning, Deep Learning in Biology.

Education

2019–present **Moscow Institute of Physics and Technology,** Dolgoprudny, Russia, **M.Sc. in Aplied Mathematics and Physics**, Department of Bio–Medical Physics.
Thesis: *Graph-based assessment of the structural significance of aminoacid residues*
Supervisor: Prof. Petr Popov

2015–2019 **Moscow Institute of Physics and Technology,** Dolgoprudny, Russia, **B.Sc. in Applied Mathematics and Physics**, Department of General and Applied Physics.
Thesis: *Studying the influence of the antioxidants on mitochondria health under oxidative stress conditions*
Supervisor: Dr. Nikolay Ilyinsky

Research Experience

2019–present **Research fellow, Scoltech iMolecule, MIPT, Moscow, Russia**,
Currently, I am working with Prof. Petr Popov on my master's research work. Thesis purpose is to analyse aminoacid interactions in protein structure. This analysis is based on the graph-network theory. During my work, I find corresponding covalent and non-covalent interactions using Python libraries, and use graph theory to research important aminoacid residues. Also, we consider all processes in dynamics.

summer 2019 **Intern, IST Austria, Vienna, Austria**,
Sazanov group: Structural biology of membrane protein complexes
My internship's project was the evaluation and optimizing particle picking process on cryo-EM micrographs. For this purpose, I used template-based particle picking programs, such as Relion and Gautomatch, and neural network-based TOPAZ and crYOLO. During my research, I learned new programs for cryo-EM imaging and write Python and bash scripts for analysing and optimizing the processes.

2018–2019 **BSc qualification work, MIPT, Dolgoprudny, Russia**,
One of the theories underlying the aging process involves the formation of excessive reactive oxygen species (ROS) in mitochondria. My bachelor research project consisted of the studying the antioxidants effect on mitochondria, especially, on the potential of mitochondria and ROS level. In my work I incubated cells with fluorescent dyes for potential (JC-1) and ROS level (H2DCFDA) under oxidative stress conditions caused by H2O2. Then incubated cells were analysed using fluorescent microscopy and flow cytometry methods.

summer 2017 **Intern, MIPT, Dolgoprudny, Russia**,
Laboratory of Ion and Molecular Physics,
Research project: The application of tandem mass spectrometry to identify molecular biomarkers for early diagnosis of Alzheimer's disease.

Work Experience

each year **Organisator of MIPT olympiads**,
Organise MIPT olympiads in math and physics in hometown, Bishkek. Interest students in abroad universities and provide an opportunitu for admission.

spring 2016 **Maxwell Olympiad in Physics, MIPT**, Sochi, Russia,
This olympiad is aimed to 7-9th grade students. I was student-jury and assistant of experimental part of olympiad.

Conferences and schools

July 2020 **Summer online school: AI for medical images**, Innopolis, Kazan, Russia.

August 2020 **Poster session**, IST Austria, Austria.

2019 **Intenational school: Modern cryoelectron microscopy**, Dolgoprudny, Russia.

November 2018 **61st MIPT Scientific Conference**, Dolgoprudny, Russia.

2018 **Biomembranes-2018**, International Conference, MIPT, Dolgoprudny.

Awards

2015 **46th IPhO**, International Physics Olympiad , Mumbai, India.

2015 **16th APhO**, Asian Physics Olympiad , Hangzhou, China.

2015 **Absolute place**, National Physics Olympiad, Bishkek, Kyrgyzstan.

2014 **15th APhO**, Asian Physics Olympiad, Singapur, Singapur.

2014 **2nd Place**, National Physics Olympiad, Bishkek, Kyrgyzstan.

Technical Skills

Projects Github: **UranMai**

Programming R, Python (PyTorch, Scikit-learn etc.), LaTeX, Bash, R, Git, Flask

Scientific skills Docking software: ICM Pro, Smina; Life Sceince: Fluorescence confocal microscopy, PCR, Gel Electrophoresis

Languages

Kyrgyz Native

Russian Fluent

English Upper-Intermediate (B2)

German Elementary (A2)