Sultan **Sultanidinov**

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Education

Korea Advanced Institute of Science & Technology(KAIST) *Daejeon, South Korea*

BSc. in Computer Science & Electrical Engineering *Fall 2021 - Fall 2025 (Expected)*

- CS Coursework: Data Structures & Algorithms, Discrete Mathematics, Machine Learning, Physical AI, Introduction to Algorithms
- Math Coursework: Linear Algebra, Differential Equations, Calculus II
- EE Coursework: Introduction to Computer Architecture, Electric Circuits, Electromagnetics, Circuit Theory

Experience

International Educational Institution ”SAPAT” *Bishkek, Kyrgyzstan*

Head Physics Olympiad Coach *November 2019 - July 2021*

- Prepared students for the International Physics Olympiad. 5 out of 5 of my students have qualified to IPhO.
- Designed Olympiad questions for the National Physics Olympiad in the field of Electromagnetism and Thermodynamics
- Organized the International Physics Olympiad and Asian Physics Olympiad, and supervised the related appealing processes.

Ministry of Education and Science of Kyrgyzstan *Bishkek, Kyrgyzstan*

Applied Math Instructor *August 2020 - July 2021*

- Taught students practical applications of mathematics to prepare for the National Test.
- Raised the average score of students by 8% in the National Test.
- Designed exclusive quizzes for simulation of the National Test in remote areas of Kyrgyzstan.
- Contributed to the creation of intensive courses for outstanding pupils attentively selected through simulated National Tests.

Projects

”Flappy Bird” and ”Rock Paper Scissors” Games (GitHub)

- Implemented Python algorithm based on Computer Vision, that allows users to play ”Flappy Bird” game using their head [Python, Numpy, OpenCV, PyGame, Mediapipe]
- Developed real-time gesture-tracking algorithm that enables users to play ”Rock Paper Scissors” with each other through camera[Python, Numpy, OpenCV, Mediapipe]

ML Algorithm Optimization(GitHub)

- Achieved the maximum efficiency for various ML algorithms such as Ridge(Lasso) Regression, K-Means Clustering, SVM and etc., which were implemented only using NumPy.[Python, NumPy, scikit-learn, matplotlib]
- Theoretically analyzed and tested traditional ML algorithms including SVM, Kernel SVM, Linear Regression, and etc.[Python, NumPy, scikit-learn, matplotlib]

Smart Farm Simulation

- Modeled and constructed a small prototype of a Smart Farm with an integrated algorithm that controls the environmental conditions[PyModi]
- Implemented hardware with relevant software algorithm for the autonomous robot, that operates inside the farm to maintain cleanliness and tidiness[Python, NumPy, PyModi]

Examination of Comedy Performances(GitHub)

- Exploited Sentimental Analyses, Text Generation and Topic Modeling(Markov Chain) algorithms on the Netflix shows, to understand the popularity of comics in different societies[Python, NumPy, scikit-learn, matplotlib]
- Applied Exploratory Data Analysis of cleaned Netflix show transcripts, to improve the efficiency of the data-cleaning process. All results for each analysis are displayed in the most understandable way.[Python, NumPy, scikit-learn, matplotlib]

Frozen Lake Environment

- Built an algorithm that teaches an AI to solve the ”Frozen Lake” environment using reinforcement learning [Python, Numpy, OpenAI]
- Constructed an autonomous robot, which executes an AI algorithm in a real ”Frozen Lake”. The robot performed the task relying on the set route, balancing its own stability[Python, NumPy, PyModi]

Honors & Awards

Bronze Medal	International Zhautykov Olympiad in Mathematics, Physics And Computer Science, **2020**	*Kazakhstan*
Top 3 of National Team	International Physics Olympiad, **2019**	*Israel*
Winner(Absolute First)	National Physics Olympiad of Kyrgyzstan, **2020**	*Kyrgyzstan*
Winner	National Physics Olympiad of Kyrgyzstan, **2019**	*Kyrgyzstan*

Skills

Programming Languages Python, Java, JavaScript, C, Matlab

Tools & Frameworks React, Django, TensorFlow, Pygame, Pymodi, OpenCV, Scikit-Learn, Git, Linux