Aidar Yessembayev
aidar.yessembayev@nu.edu.kz

Personal essay

Dear Sir/Madam,

My name is Aidar Yessembayev and I want to become a student at the Master of Science in Computer Science at Nazarbayev University. This personal essay should help me to indicate main reasons why my personality suits your expectations.

Here is the list of factors that supports my confidence that I am a good candidate:
- ❖ I was involved in different research projects:

- **Secured Smart Housing for Elderly People**

The project aims to establish a new platform to improve security and level of comfort of the house. The idea is to give full control to the user to monitor and regulate his/her own house, and at the same time give access to the system to perform sensible decisions on its own. I was responsible to build a system that predicts through machine learning algorithms whether the owner of the house should power on/off simple appliances. For the machine learning, I have used the voting classifier with 5 different machine learning algorithms in it. Also, I was responsible to build a mobile application using React Native technology that allows to monitor sensor data and control various appliances of the house. Additionally, part of my responsibility was to work with hardware to build the whole system.

- **Feature Selection for Silhouettes: Skeleton-Contour-Deep Learning**

The project represents different methods for feature selection and extraction from silhouettes using skeleton, contour, deep neural network and convolutional neuron network. In this work, I applied the SVM algorithm to the skeleton and contour of the images to define the difference between accuracy from these approaches and Deep Learning algorithms.

- **Financial forecasting and building a diversified portfolio**

In this project, different machine learning algorithms are tested by me in order to decide which algorithm provides the highest accuracy for financial time series forecasting. After that, the diversified portfolio is built also by me, where 10 companies, that show the best growth and, at the same time, are uncorrelated, are selected from S&P 500 index.

- ❖ There some of my projects that were very interesting for investors:

- **Rizamyn Mobile App**

Investment offers received: 3 offers

Sum of investments offered: 2 000 000 KZT

Rizamyn is a cashback service that gives you back a percentage of your final purchase price as a bonus to the next purchase. The whole project was built by me using React Native technology.

- **Key Word Mobile App**

Investment offers received: 1 offer

Sum of investments offered: 1 500 000 KZT

Key Word is a messenger where all users have unique and interesting account names. The whole project was built by me using Android technology.

❖ I took part in different internships:
- **nFactorial Incubator**

nFactorial Incubator is a 7-week app development bootcamp to produce mobile app engineers. I participated twice in this internship, first time I studied deeply how to build Android mobile applications and second time how to build React Native mobile applications.

- **Lemon Tree Mobile App**

Downloads: 130 000
Market: Kazakhstan only
Current status: Discontinued (Lack of investment)
Format: Mobile application (Android)
Period of my involvement: 7 months (Internship + Work)

Lemon tree is a mobile marketing platform that provides businesses with different tools to conduct marketing researches, to get people's opinion and to increase brand awareness. Users receive points for every and single answer given that may be converted into mobile minutes. I was responsible for the design of the project and mostly worked with XML files.

❖ I have good work experience:
- **Nazarbayev university, Research Assistant,** April 2019 – Present

I am working on the project Smart House (synergy of IoT, robotics, machine learning, mobile development and computer vision) under the tutelage of an experienced professor Adnan Yazici.

- **Dom Invest Real Estate Agency, Software Engineer,** March 2019 – May 2019

I helped to integrate a CRM system based on Bitrix24 technology. Bitrix24 is a software service, providing a company with a full range of team working and social networking means. Also, I built a website using Wix technology.

- **Duken me Mobile App, React Native mobile developer,** August 2018 – December 2018.

I helped to build a cross platform mobile application Duken me using React Native technology. Duken me is a baby products online store in Kazakhstan. I mostly worked as a front-end mobile developer in collaboration with my colleagues.

- **Lemon Tree Mobile App, Front end Android mobile developer,** August 2016 – December 2016.

I helped to build a mobile application Lemon Tree using Android technology. I was responsible for design of the project and mostly worked with xml files.

In future, I want to be a part of a research and development department and be able to not only apply my knowledge on practice but also improve the existing systems in the field of computer science. I want to further develop all my projects. Also, I am interested to build and

develop Robotic Process Automation system that allows anyone today to configure computer software, or a "robot" to emulate and integrate the actions of a human interacting within digital systems. It will be a synergy of fields of Computer Vision and Artificial Intelligence. Additionally, I am interested to build a system that will help to improve the financial literacy and develop the financial sector of my country. To do so, the system will predict the future price of the indexes and bonds by analysing huge data of macroeconomic parameters and build a diversified portfolio. It will be a synergy of fields of Data Science, Machine Learning, Artificial Intelligence and Finance. I truly believe that Master of Science in Computer Science at Nazarbayev University can give me an opportunity to fulfil my goals. Therefore, I will devote myself to studies and put all my efforts to make a great contribution to the NU community.

Thank you for considering my application.
Sincerely, Aidar Yessembayev.