

SHYNGYSKHAN ABILKASSOV

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EDUCATION

Nazarbayev University, Astana

BSc in Robotics and Mechatronics, Minor in Computer Science.

School of Engineering and Digital Sciences Student Council Representative

August 2017 - May 2021

Overall GPA: 3.81, Top 5%

WORK EXPERIENCE

Google Summer of Code, JdeRobot

Open Source developer

May 2019 - August 2019

- Developed **indoors localization**, **goal navigation**, **item pick-and-place logic**, and **resting behaviour** for full scale autonomous task completion for warehouse robot
- Improved local navigation task performance for robot in complex interior environment. Robot reaches desired destination **2 times faster** than previous implementation
- Integrated proper transformations for sensor frames, introduced proper ROS topics messaging and naming, and integrated *SLAM*, *AMCL*, *Navigation stack* ROS packages into the Gazebo robot model

ALARIS Laboratory

Research Assistant at Autonomous Truck development project

December 2018 - September 2019

- Integrated ROS messaging for *LiDAR*, *Camera*, *IMU*, *GPS* for remote data acquisition and control of simulation truck model
- Generated a map based on *Odometry*, *LaserScan* data using **SLAM algorithm**
- Implemented topic data subscription and publishment for non-ROS environment through **sockets and Flask REST service** for data visualization on web interfaces.

Zerde National Infocommunication Holding

Software Engineer Intern

April 2018 - July 2018

- Developed user-interface for search and export of documents using Elastic Search in MongoDB database.
- Implemented user activity monitoring web service in internal portal, and designed and created both **REST service and admin interface** using *AngularJS* and *Java Spring*.

Central Asian Youth Network

Country Executive in Kazakhstan

August 2017 - September 2018

- Organized seminar on topic of countering Violent Extremism and Radicalization Leading to Terrorism for new cohort of participants of CAYN which was held and supported by the OSCE.
- Arranged CAYN alumni reunions in Astana and Almaty.

PROJECTS

Driver Distraction Posture Classification

Implemented a multi-modal CNN for distracted driver posture classification on merging two **ResNet50** models trained on self-gathered dataset, using transfer learning approach, with a test accuracy of accuracies of 92% and 89%

ai.ball

Conversational Telegram chat-bot which uses **Naive Bayes algorithm for NLP**, Yandex SpeechKit for speech recognition and synthesis and multiple Flask micro-services for API calls to various services

Ashyq Hattar

Both IOS and Android application in Kazakh developed for ease of elder population for image search, generation and sharing written on React Native. 700+ downloads. Mentioned in Forbes, Informburo.

SearchForMe

Telegram chat-bot on Python which **searches and scrapes information from Google, Yandex, Mail.ru, and Rambler**. SearchBot constantly monitors all current ratings and informs users about changes in result positions for their inputs.

ACHIEVEMENTS

1st place in HackNU International Hackathon 2019, BTS Digital case

2nd place in Astana Innovations Challenge, Smart Services

2nd place in HackNU 2018, ZeroToOneLabs case

Fellow recipient of **Bertelsmann Data Science Scholarship**

Country Executive in Kazakhstan at Central Asian Youth Network, established by the OSCE

Completed Data Science, Machine Learning (Ng), Neural Networks and Deep Learning courses

SKILLS

Languages

Python, Java, C, C++, JavaScript(Node.js)

Robotics

ROS, Gazebo, OMPL, STM32 Microcontrollers, Raspberry PI

Tools & Technologies

PyTorch, OpenCV, scikit-learn, Git, MATLAB

Databases

NoSQL, GraphQL, Firebase