Aigerim Gilmanova

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EDUCATION

Bachelor of Engineering in Electrical and Electronic Engineering Nur-Sultan, Kazakhstan | Jun 2021
Nazarbayev University

Master of Science in Robotics and Computer Vision Innopolis, Rep. of Tatarstan | Aug 2023
Innopolis University

WORK EXPERIENCE

AILABS (AILABS.KZ) | Machine Learning Researcher Nur-Sultan, Kazakhstan | Jul 2022 – Present

- Researched and implemented accent conversion using transformers.
- Tech Stack: Python, Torch.

NAZARBAYEV UNIVERSITY | Research Assistant (RA) Nur-Sultan, Kazakhstan | Jun 2020 – Mar 2021

- Simulated etched nanoparticle-doped optical fiber for RI sensing.
- Tech Stack: C++, COMSOL Multiphysics.

ERG (ERG.KZ) | Software Engineering Intern Nur-Sultan, Kazakhstan | May 2019 - Aug 2019

- Optimized workers' documents and parsed data.
- Tech Stack: Python, Excel, GitLab.

PROJECTS

SURGICAL INSTRUMENT TRACKING Python, Torch, Roboflow, YOLOv5
A model that tracks surgical instruments.

- Reduced noise by Gaussian filter with different sigma and detected surgical instruments using Otsu's method.
- Involved in creating surgical instrument dataset using Roboflow.
- Trained fully based CNN model (YOLOv5).

HUMAN IRIS CENTER CALCULATION Python, Torch, Numpy, Pandas
A CNN model that calculates human iris center.

- Visualized images, normalized them and cropped eye regions.
- Built a CNN model including different combinations of different optimizers, loss and activations functions.

NETWORK INTRUSIONS CLUSTERING Python, Pandas, Sklearn
A notebook that clusters network intrusions by using unsupervised approach.

- Preprocessed data and visualized it using PCA.
- Implemented K-Mean and DBSCAN models to cluster networks including Elbow and Silhouette methods as hyperparameters.
- Detected outliers.

CAMERA CALIBRATION Python, OpenCV
A notebook that calibrates camera using chessboard pattern.

- Calibrated camera.
- Estimated height and width of another object by using calibrated camera, and calculated the distance between the camera and object.

QUADCOPTER Arduino, Soldering, Control Theory

- Implemented PID Controller.
- Soldered electronics.

SKILLS

Languages: Java, C++, Python, Matlab
Libraries: Torch, Numpy, Pandas, Sklearn, OpenCV
Technology: Git, Comsol Multiphysics, Arduino, LaTeX