Koyilbek Valiev

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Summary

I'm Koyilbek from Uzbekistan. I am interested in technology-oriented activities that use new technologies like AI tools to solve any existing problems in society. With my 2 years of experience in diverse hands-on projects and my enthusiasm for continuous learning, I am always committed to pursuing new and challenging opportunities.I am currently learning advanced Computer Vision algorithms. For a quick and easy way to get information about me, try chatting with my chatbot.

Experiences

AI Research Intern *Capstone Project, Woosong University*
Sep 2023 - Dec 2023 (4 months)

Developed AI-Powered Trash Bag Optimization System:

- Coordinated team of 4 engineers to create computer vision system for NetVision optimizing trash bag collection routes and processes.
- Utilized YOLOv8 architecture to AI system detecting, classifying, segmenting, tracking, and size-estimating trash bags from video in real-time.
- Participated with this project in Woosong University's 2023 Capstone Competition with permission from NetVision, winning 1st place award.

AI Research & Computer Vision Intern *Sequus PTY LTD, Australia (Remote)*
Jun 2023 - Sep 2023 (3 months)

Developed Semi-Automated Annotation Pipeline for Construction Plans:

- Annotated hundreds of architecture drawings and labeled key components like one and multiple regions on constructional floor plans using LabelImg.
- Trained custom YOLOv8 object detection model on manually annotated drawings to semi-automate annotation
- Wrote scripts to transform output bounding boxes from model to various formats including YOLO, Pascal VOC.
- Achieved 85% automation of annotation process through continuous model retraining, reducing manual workload.

Computer Vision & IoT Intern. *The Sparks Foundation, India (Remote)*
May 2023 - Jun 2023 (one month)

Architected Real-Time Face Mask Detection System:

- Developed end-to-end deep learning pipeline using PyTorch, OpenCV, and MTCNN enabling 97% accurate identification of mask wearing from live video.
- Fine-tuned ResNet50 pre-trained model through transfer learning, retraining final layers to categorize mask wearing from real-time feed.
- Mastered data preprocessing and model training.

Projects: Refer portfolio koyilbek for more details and other projects

- **Auto-Detection of Kidney Conditions:** Engineered a project focused on automating kidney disease detection in medical images using cutting-edge deep learning architectures like ResNet50, VGG16, VGG19, and U-Net by implementing techniques like data augmentation and adaptive fine-tuning. I creatively repurposed the U-Net architecture primarily designed for segmentation, modifying its final layers for classification tasks, resulting in heightened accuracy and precision in kidney identification. I Implemented PyTorch and Python for leveraging

CNN, ResNet50, VGG16, VGG19, and U-Net via transfer learning techniques, ensuring robust and accurate identification of kidney illnesses within medical images. More details in : ***Project Link*** | ***Presentation Link*** | ***Report Link***

- **Multi-class Weather Classification:** Implemented a weather classification system utilizing PyTorch and Convolutional Neural Networks (CNNs) to categorize images into distinct weather conditions. Leveraged a custom dataset sourced from ***Kaggle*** datasets and integrated advanced techniques such as data augmentation and transfer learning to enhance model accuracy and performance. More details in: ***Project link*** | ***Presentation Link***

- **StatFlow EDA Web App**: Implemented the development of StatFlow EDA, a user-friendly web-based application designed to facilitate *Exploratory Data Analysis (EDA)* on uploaded datasets. Constructed using Streamlit, Pandas, NumPy, Matplotlib, Seaborn, and Pandas Profiling, the app seamlessly integrates various data science libraries and is hosted on the Streamlit cloud platform. Key functionalities encompass descriptive *statistics generation, data cleansing capabilities*, *dynamic visualization tools*, and *correlation analysis features*. More details in: ***Project link | Demo Link***

Education

Woosong University *Sep 2021 - June 2025*
Bachelors, Major in AI & Big Data (Computer Science)

Fergana High School No: 13 *Sep 2020 - Jun 2021*
*GPA:5/5, Achieved 4A*s in Physics and Mathematics*

Skills

Technical: Python, OpenCV, Git, PyTorch, TensorFlow, Scikit-Learn, Annotation, Matplotlib, Seaborn, Pandas, NumPy, SciPy, Transformer, Selenium, Django, Computer Vision, Machine Learning, Deep Learning

Soft: Public Speaking, Adaptability, Team Player, Time Management

Awards

Merit-Based 100% Scholarship Award	Woosong University, Sep 2023 - Dec 2023
Woosong University President's Award	Woosong University, Dec 2023
IoT Class Learning Concert Winner	Woosong University, Dec 2023
2nd place in ML Class Concert Competition	Woosong University, Dec 2023
2nd Place in District English Language Competition	Fergana District Olympiad, 2019
1st Position in Inter-School Olympiad	Fergana District Olympiad, 2015
Top Performer in Chess Competition	Fergana Chess Competition, 2013

Other Experiences

- *Volunteer Experience:* Served as a Sol-Green Police Volunteer at Woosong University from July 2023 to November 2023 (4 months), overseeing campus environmental care and ensuring cleanliness.
- *Teaching Experience*: Conducted a foundational Python Programming course at Woosong University from October 2021 to December 2021, delivering lectures and tutorials to freshmen via Zoom meetings.