Shakhboz Abdigapporov
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EDUCATION

M.S. in Computer Science GPA: 4.22/4.5(93.8%) Inha University, South Korea 09/2021-08/2023
B.S in Business Administration GPA: 4.18/4.5(92.9%) Inha University, South Korea 03/2017-02/2022

SKILLS

Programming Languages: Python, Java, C++, HTML & CSS, Dart
Frameworks: Pytorch, Tensorflow, Hugging Face Transformers, OpenCV, Keras, ONNX
Tools: Git, Docker, Conda, Google Cloud Platform

EXPERIENCE

Skyve (skyve.co.kr) Seoul, South Korea
Artificial Intelligence Researcher | Medical Imaging 08/2024 - current

- Automated Knee bone MRI image segmentation annotation process by developing 2d/3d Knee bone and cartilage image segmentation application using SOTA deep learning models. Developed application decreased annotation process time from 45 minutes to 28 seconds for each patient.
- Conducted extensive research on performance evaluations of DL models (Unet, UNETR, Swin + Unet and etc.) in medical image segmentation.
- Built an extension for reconstructing 3d mesh knee bone and cartilage objects using 2d predicted segmentation masks.

Visionin Inc. (vision-in.co.kr) Seoul, South Korea
Artificial Intelligence Researcher | Team leader (Data Team) 09/2023 – 07/2024

- Implemented encoder backbones for training and testing integrated AI models using Python on edge devices.
- Converted AI models from PyTorch to ONNX to TensorRT, and developed a Python GUI application for commercial use, enhancing user interaction.
- VISO – Maintained Fire, Smoke, and Human image data generation application with training new detection models (Yolov7, Yolov8, Yolov9 and etc.).
- JIAT(VisionIn/Jeonbuk Institute of Automative Convergence Technology project) - ROS system setup on NUVO pc and check on multiple cameras and lidars on an autonomous truck.
  - Implemented camera calibration and lane curvature estimation.
- Samsung Electronics home appliances setup project
  - Developed a machine learning model for checking the correct installment of the electronic home appliances through verified images.
  - Combined numerical and image data for ML model prediction for correct product and cover placement, installation process steps using the installment images of a product.

CVLab, Inha University Incheon, South Korea
Artificial Intelligence researcher | Computer vision 03/2021 – 08/2023

- Collected, annotated, and organized 36,000 images for training and testing AI models.
- Designed an integrated AI model(MultiHeadNet) with encoder-decoder architecture for detection and segmentation.
- Conducted comparative evaluations of developed models against SOTA methods, focusing on performance and reliability

Research Publications

- **Joint Multiclass Object Detection and Semantic Segmentation for Autonomous Driving.**

IEEE Access, open Access Journal: https://ieeexplore.ieee.org/document/10098794 (April 11, 2023)

- **Performance Comparison of Backbone Networks for Multi-Tasking in Self Driving Operations.**

The 22nd International Conference on Control, Automation and Systems
https://ieeexplore.ieee.org/abstract/document/10003816 (ICCAS 2022, Nov 27 - Dec 1)

- **Real-Time Memory Efficient Multitask Model for Autonomous Driving**

IEEE Transactions on Intelligent Vehicles: https://ieeexplore.ieee.org/document/10109860 (April 27, 2023)

- **Prediction for Retrospection: Integrating Algorithmic Stress Prediction into Personal Informatic Systems for College Students' Mental Health.**

https://dl.acm.org/doi/abs/10.1145/3491102.3517701 (CHI 22, April 30 – May 6, New Orleans)

Honors & Awards

Inha University's Top Academic Excellence Award 08/2023

• Winner of top academic excellence award for finishing master's degree in 1st place among engineering field graduates and 2nd among all graduating students of 2023 spring semester in terms of the quality, quantity of publications as well as the academic performance.

Inha Global Vision Scholarship for Master's Degree Program (100%) 09/2021-08/2023

• Received full scholarship which covered 100% of the tuition expenses during the period of master's degree due to the outstanding academic performance.

Inha Global Tutoring Program Best Teamwork Award 09/2021-08/2023

• Tutored Operating Systems course for Inha University bachelor students in spring 2023 semester. Presented with the best team award among 6 teams of Inha tutoring program.

Winner of Startup Accelerating with Appropriate Technology Overseas Program 02/2019

• 1st place certification winner of Inha Startup Accelerating with Appropriate Technology Overseas Program with "BariNet" real estate application.