RAKHMATOV SHOHRUH

Senior ML/CV Engineer, Seoul, South Korea

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SUMMARY

- Dynamic Machine Learning and Computer Vision specialist with six years of robust experience in South Korean companies.
- Award-winning AI Expert with key achievements including **1st Place in the 2021 ICCV** Instance Segmentation Challenge and a ground-breaking ICCV paper.
- Skilled AI research engineer to develop SOTA deep learning techniques to solve complex problems.

EDUCATION

Master of Science in Computer Science Mar 2017 — Aug 2019

Kumoh National Institute of Technology, South Korea

Thesis: Texture Defect Detection by Automatically Focusing on Abnormal Pixels.

Advisor: Prof. Ko Jay Pil

Bachelor of Science in Computer Science Jul 2011 — Jun 2015

Tashkent University of Information Technologies, Tashkent, Uzbekistan

PROFESSIONAL EXPERIENCE

Senior ML&CV Engineer Sep 2023 – Current

Deep-In-Sight *Seoul, South Korea*

- **Advanced Driver Monitoring System**: Integrating Optimized PIPNet for Facial Landmark Detection - Achieving 1.6% NME.
- **Sophisticated Head Pose Estimation:** Integration for Improved In-Cabin Safety and 20% increase driver attentiveness.

Team Lead Apr 2021 – Jul 2023

DeltaX.ai *Seoul, South Korea*

- **SCMS Innovation:** Spearheading Safety Revolution with a 25% Reduction in In-Cabin Incidents.
- Led SCMS development, integrating over 10 SOTA deep learning models to significantly lower in-cabin incidents.
  - **Driver Drowsiness and Distraction Detection:** Improved alert response times by 19%.
  - **Head Pose and Gaze Estimation:** Enhanced driver monitoring accuracy by 12%.
  - **Facial Attribute Analysis:** Significantly Enhanced Identification Accuracy.
  - **Occupancy, Seatbelt, and Left Item Detection using IR camera:** Reduced false positives by 25%.
- **Strategic Management of Triple AI Projects:** Skillfully directed three major AI projects, encompassing object detection, segmentation, and landmark detection, to significantly streamline processes and enhance overall project delivery efficiency.

Senior ML&DL Engineer

DeltaX.ai

- **Edison Motors AI-Powered Passenger Management:** Advanced Occupancy Monitoring for Enhanced Bus Operations.
- **Advanced AI-Driven Defect Detection at KIA:** Revolutionizing Quality Control with 98.6% Accuracy, and reducing manufacturing errors by 40%.
- **Autonomous Vehicle Perception Enhancement:** AI-Driven Safety and Efficiency Solutions.
  - **Efficient Lane Detection:** Utilized EfficientNet_v2 and Deeplabv3+ for 30% faster without compromising accuracy.
  - **Long-Range Object Detection:** Advanced system developed to detect objects and persons beyond 25 meters with 95% accuracy, significantly bolstering navigational safety.
  - **Monocular Depth Estimation:** Innovated in depth perception, crucial for vehicular safety.
  - **Occupancy, Seatbelt, and Left Item Detection using IR camera:** Reduced false positives by 30%.
- **Advanced Gesture Recognition for LG Display Control:** Leveraging TSM-Based AI for 40% Enhanced User Interaction Efficiency
- Directed the creation and implementation of a facial attribute analysis model, boosting system efficiency by 22%.
- **Facial Attribute Analysis Deployment:** Improved Vehicle Safety and User Experience
- **Strategic Management of Triple AI Projects:** Skillfully directed three major AI projects, encompassing object detection, segmentation, and landmark detection, to significantly streamline processes and enhance overall project delivery efficiency.
- **Model Quantization Specialist:** Mastering ML/DL/CV Model Optimization and Quantization.

Machine Learning Research Engineer Nov 2019 – Mar 2021

Hyundai MIB International *Seoul, South Korea*

- **AI-Powered Counterfeit and Currency Recognition:** Global Impact in Over **100 Countries**, Elevating Finance & Retail Security.
  - **Advanced ML Counterfeit Detection:** Developed and deployed a high-accuracy model, significantly reducing counterfeit incidents by up to 35% in finance and retail sectors, and enhancing sector trust and compliance.
  - **Enhanced Recognition Precision and Speed:** Achieved a 22% increase in accuracy and a two-fold improvement in processing speed, revolutionizing global transaction efficiency.
  - **Ultra-Fast Currency Processing:** Advanced AI system capable of counting up to 1500 currencies per minute.
  - **Impact and Reach:** Successfully exported the solution to over 100 countries, enhancing accuracy, and customer trust.

Graduate Research Assistant Mar 2017 – Jun 2019

Department of Computer Engineering, Kumoh National Institute of Technology *South Korea*

- **Brand Logo Detection in Sports Media:** Elevated to 98.7% Accuracy, Tripling Speed and Maximizing Monetization Efficiency.
- **Advanced Segmentation in Facial Wrinkle Analysis:** Pioneering 96.7% Precision in AI-Powered Dermatological Assessment.
- **Next-Generation Textile Inspection Technology:** Fabric Defect Detection model, leading to a 30% improvement in quality control efficiency.
- **Revolutionized Car Painting Quality Control:** Improved inspection accuracy by 25%, significantly reducing manual inspection requirements and saving approximately 20% in associated labor costs.

PATENTS AND AWARDS

2021	**WINNER,** 1st Place 2021 ICCV Instance Segmentation Challenge. Visual Inductive Priors for Data-Efficient Computer Vision Instance Segmentation Challenge	*Montreal, BC, Canada.*
2021	**Paper (ICCV),** Task-Specific Copy-Paste Data Augmentation Method, for Instance, Segmentation, Visual Inductive Data-Efficient Deep Learning Workshop at ICCV.	*Montreal, BC, Canada.*
2021	**Winner**, Collaborated in Self-Driving Data Contest 2021 Grand Prize, Won Korea Transportation Safety Authority Chairman Award.	*Seoul, South Korea.*
2022	**Patent**, System for monitoring passengers within the cabin of passenger transport vehicles.	*Seoul, South Korea.*

COMPETENCES

- **Code Excellence:** Over five years mastering code review and debugging, ensuring software quality.
- **Optimization:** Adept at writing high-performance, optimized code for accelerated computing solutions.
- **Collaborative Development:** Proficient in team coding tools like GitLab and Github.
- **Medical/Fabric Imaging Specialist:** Extensive experience in advanced medical image processing.
- **Research and Continuous Learning:** Passionate follower of leading ML and CV conferences.
- **Parallel Computing Enthusiast:** Experienced in setting up parallel computing environments, including clusters and Parallel GPUs.
- **A big Fan of CVPR, ICCV, ECCV, ICML, etc.**
- **MLOps Tools:** Git/Github, MLflow, Docker, WANDB, Fast API, Flask

LANGUAGES

- **Language:** English (Fluent), Uzbek (Native), Russian (Intermediate), Korean (Basic).

Last updated: 2023.11.11