Alibek Erkabayev

Phone number: (+90) 5545105415 (Mobile) | **Email address:** ear.cv.dev@gmail.com | **Website:** https://bigalex95.github.io/ | **Website:** https://github.com/bigalex95 | **LinkedIn:** bigalex95

ABOUT ME

As an AI/ML and Computer Vision Engineer, I am passionate about developing innovative solutions that integrate advanced technologies. My expertise lies in designing and optimizing AI/ML models, implementing computer vision algorithms, and deploying scalable applications.

WORK EXPERIENCE

WEB-AR.STUDIO – MOSCOW, RUSSIA

COMPUTER VISION ENGINEER – 11/2021 – 02/2025

Developed custom computer vision algorithms leveraging WebGL and WebAssembly for real-time AR processing at Web-AR.Studio.

• Researched and implemented feature detection and matching techniques for object recognition.
• Explored SLAM methodologies to enhance AR experiences with accurate positioning and mapping.

ERA TECH COMPANY

MACHINE LEARNING ENGINEER – 07/2018 – 10/2022

• Designed and optimized AI/ML models for deployment on cloud and edge devices
• Developed data pipelines for scraping, aggregating, and processing large-scale datasets
• Provided AI consulting and technical solutions for businesses in WebAR, Computer Vision, and AI-driven applications
• Development and Deployment API (FastAPI, Django Rest Framework, Flask)
• Converting AI/ML models to Tensorflow, Tensorflow Lite, TensorRT, ONNX models

UZAKTA BILISIM A.Ş. – ISTANBUL, TÜRKIYE

MACHINE LEARNING RESEARCHER – 09/03/2020 – 29/10/2021

• Implemented Conditional GANs and Markovian GANs for obstacle clearance in real-world environments
• Researched the impact of CNN architectures and image resolution on model accuracy and inference speed
• Developed and optimized deep learning models on Nvidia Jetson AGX Xavier for edge AI applications
• Hardware configuration and implementing sockets for connection Host and Nvidia Jetson AGX Xavier

YILDIZ TECHNICAL UNIVERSITY COMPUTER ENGINEERING DEPARTMENT – ISTANBUL, TÜRKIYE

RESEARCHING TRAINEE AT ROBOTIC LAB – 04/07/2018 – 16/08/2018

• Creating Robotic Model
• Automated exploration 3D map
• Automated obstacle detection and avoidance

YILDIZ TECHNICAL UNIVERSITY COMPUTER ENGINEERING DEPARTMENT – ISTANBUL, TÜRKIYE

RESEARCHING TRAINEE AT HARDWARE LAB – 30/07/2017 – 17/09/2017

• Working with FPGA
• Implementing a Basic Computer Model
• Making FPGA tutorials for Computer Science students

EDUCATION AND TRAINING

12/08/2024 – CURRENT Konya, Türkiye

A MASTER OF SCIENCE IN COMPUTER ENGINEERING Konya Technical University

Website https://www.ktun.edu.tr/ | **Level in EQF** EQF level 7

31/08/2014 – 24/05/2021 Istanbul, Türkiye
A BACHELOR OF SCIENCE IN COMPUTER ENGINEERING Yildiz Technical University

Address Davutpasa mah. Davutpasa cad. Esenler Istanbul (Turkey), 34220, Istanbul, Türkiye | **Website** https://ce.yildiz.edu.tr/ |

Level in EQF EQF level 6

20/07/2017 – 04/08/2017
INTRODUCTION TO CRYPTOGRAPHY AND REVERSE ENGINEERING Linux Summer Camp

31/08/2013 – 31/05/2014 Manisa, Türkiye
ENGLISH LANGUAGE PREPARATION SCHOOL Celal Bayar University

SKILLS

Programming Languages

Python | C | C++ | JavaScript | Dart

Frameworks & Libraries

Tensorflow | Pytorch | Scikit-learn | Keras | FastAPI | Flutter

Data Manipulation

Numpy | Pandas

Data Visualization

Matplotlib | Seaborn | Tableau | Power BI | Plotly

Image Proccessing

OpenCV | Scikit-image | PIL | CImg

Cloud Platforms

AWS (SageMaker) | Azure (ML Studio) | GCP (AI)

Other Tools

Git | Docker | CI/CD pipelines | Kubernetes | ONNX | TensorRT

PROJECTS

Web Augmented Reality System

- **GPU-based Image Pipeline:** Implemented real-time image preprocessing and postprocessing using WebGL shaders to offload computation from the CPU and improve responsiveness.
- **Local Feature Detector/Descriptor in WebGL:** Built custom implementations of local keypoint detectors and descriptors (e.g., FAST, ORB) using fragment shaders for fully GPU-side processing.
- **WebAssembly Modules:** Ported and optimized traditional C++ detector/descriptor algorithms to WebAssembly for high-performance execution within web workers, enabling parallel processing and thread-safe execution.
- **Modular JavaScript Architecture:** Utilized web workers for asynchronous processing and ensured scalability across devices.

Link https://web-ar.studio/

Clean image and apply Super Resolution

- Clean images from obstacles with image-to-image generation **Pix2Pix (Conditional GAN)**
- apply super-resolution with **TeCoGAN**
- Refactor and Optimize Code for **Nvidia Jetson AGX Xavier**
- Develop Basic WEB UI with **WebRTC** for Demo

Link https://github.com/bigalex95/ImageCleaning

Object Detection with YOLO and LSTM

- Prepare **Hospital Image Dataset**
- Train and Evaluate **Tiny Objects** Custom Dataset with **YOLOv3**
- Tracking Objects with **LSTM**

NSFW Classifier

Content Moderation API to check nudity/adult/18+ contents in the image

- Machine Learning model with 100,000+ trained images
- Developing fast API with low latency
- Dockerized and CI/CD configured for deploying to Digital Ocean

Link https://rapidapi.com/lazy-learners-lazy-learners-default/api/nsfw-classifier4/

Portfolio Website with Live Demo of ML projects

- Developed Fullstack (**Gatsby.js/React** and **FastAPI/Python**)
- Configured with DevOps (**Docker/Docker-Compose** and **Github Actions Workflow**)
- Deployed to Cloud (**Gatsby Cloud, Digital Ocean,** and **AWS**)

Link lazylearning.me

Creating Pictures with Artificial Intelligence

- Prepared **Logo Image Dataset** with **Real** and **Synthetic** Logo Images
- Configured **StyleGANv2** for **Conditional training**
- Trained Custom Dataset with **StyleGANv2**
- Developed Web UI with **Flask** for Demo

Link https://github.com/bigalex95/AIsupportedLogoGenerator

Android Malware Detection System

- Hashing **Smali Opcodes** to Get Better Performance and **Reduce Size**
- Train with **GloVe** and **Word2Vec**
- Test and Evaluate with **Weka**

Link https://github.com/bigalex95/AMDwithML

LANGUAGE SKILLS

Mother tongue(s): **UZBEK**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
RUSSIAN	C1	C1	C1	C1	C1
ENGLISH	B2	B2	B2	B1	B2
TURKISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user