

MD REZOWAN SARKAR

Computer Vision Researcher & XR Developer

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Profile

AI and computer vision researcher with a production engineering background in AR, VR, and video game development. Currently building low-cost, edge-deployable computer vision systems for agricultural disease detection, with hands-on experience taking deep learning models from research through to real-time deployment on Unity and edge hardware.

Areas of Expertise

Computer Vision, Deep Learning, Edge AI Deployment, XR/AR/VR Development

Professional Experience

- Graduate Research Assistant @ ([UNITEN](#))

Malaysia

[From 15 April, 2026 – Present]

Project: “Low-Cost AI for Early Detection of Oil Palm Diseases: A Computer Vision Approach Using Public and Collaborative Datasets”

 - Building a low-cost, edge-deployable computer vision pipeline for early detection of oil palm diseases using public and collaborative datasets.
 - Developed severity-conditioned GAN-based synthetic image generation to address limited disease data, with a novel Biological Fidelity Metric (BFM) combining FID score, expert lesion scoring, and classifier agreement to validate synthetic image quality.
 - Benchmarking edge AI inference performance (CPU vs. NPU) to assess real-world deployment feasibility.
- Software Engineer @([Surbana Jurong Group](#)) Website: surbanajurong.com

Singapore

[From 9 September, 2024 to 31 October, 2025]

 - My role as a Software Engineer at Surbana Jurong is to develop Digital Twin systems using Unity Engine. I worked on Developing D.T. for **Changi Naval Base** – Singapore.
 - Contributed to the open-source Web Browser project to support UI Toolkit. [UnityWebBrowser-UI-Toolkit](#)
 - Developed Android application with Unity to send application controlling commands to Digital Twin using MQTT protocol.
- Xperience Engineer @([Singularity Limited](#)) Website: singularitybd.com

Dhaka, Bangladesh

[From 14 December, 2020 to 31 October, 2023]

 - My role as a Xperience Engineer at Singularity was to develop Video Games and XR applications. Areas covered: URP, Oculus Quest, Vuforia, Profiler, Photon, Optimization.
 - Developed Bangla Letter recognition system using OpenCV for an education video games – Bangla Iskool – banglaiskool.com
 - Worked on various AR, VR project. One of them is [Tika AR Mural](#), the first AR Mural in Bangladesh which was developed for Turkish embassy.
 - Worked on multiplayer system Using Photon Engine. [Runner Metaverse](#) is one of them where you can login>create your avatar>roam around>chat>voice chat> text
 - Worked on several Computer Vision projects, including hand and body recognition systems.

Education

MSc Master of Information Technology
Universiti Tenaga Nasional (UNITEN) [2026 -] Putrajaya, Malaysia
Thesis: “Biologically Validated Synthetic Crop Disease Image Generation Using Severity Conditioned GANs for Agricultural AI”
Web: uniten.edu.my eMail: enquiry@uniten.edu.my

BSc Computer Science and Engineering[CGPA:3.05/4.00]
International University of Business Agriculture and Technology[2015-20] Dhaka, Bangladesh
Thesis: “Potato Leaf Disease Detection Using Computer Vision”
Web: iubat.edu eMail: info@iubat.edu

Skills and Tools

Python, C#, C++, Unity 3D, Qt, PyTorch, TensorFlow, OpenCV, YOLOv8, Verilog/HDL, Edge AI Deployment (Qualcomm QNN, NPU/INT8 Quantization), Git, Docker, Linux

Projects

- >**onnx2qnn** - Hosted ONNX-to-QNN conversion script for deploying YOLOv8 models on Qualcomm edge hardware with INT8 quantization and NPU inference. [repository](#)
- >**YOLOv8 Inference on Radxa Dragon Q6A NPU** - Real-time YOLOv8 object detection in C++ on the Qualcomm QCS6490 Hexagon NPU, with live bounding-box overlay, FPS/latency benchmarking, and COCO-style mAP evaluation. Detects oil palm ganoderma disease at ~21ms/frame (mAP@0.5: 0.70 on validation, int8-quantized). [repository](#)
- >**DroneView Simulator** - Metal/Swift top-down terrain viewer that simulates a drone's aerial camera over a grid of images, with real-time RTSP streaming via FFmpeg and MediaMTX - used for testing computer vision pipelines against synthetic aerial footage. [repository](#)

Awards

Got awarded as an Employee of the Quarter @Singularity Limited for outstanding performance. [Link](#)

Languages

1.English, 2.Bengali: Native