Ashay Kargaonkar

AI/ML Engineer · Computer Vision

India | +91-7498914615 | ashaykargaonkar@gmail.com

ashaykargaonkar.com | linkedin.com/in/ashay-kargaonkar | github.com/ashaykargaonkar

Summary

Backend-focused engineer transitioning into **AI/ML with a specialisation in Computer Vision**, combining hands-on experience building **OCR and object-detection pipelines** (TrOCR, ONNX, OpenCV, YOLO) with deep production skills in **.NET / C#**, **AWS** (Lambda, S3, EC2, DynamoDB), **Docker**, and **CI/CD**. Proven ability to design **asynchronous, event-driven ML workflows** and ship scalable, production-ready systems end-to-end — bridging the gap between ML model development and robust infrastructure deployment.

Skills

Computer Vision & ML	PyTorch, OpenCV, PIL, Roboflow, YOLO (object detection), TrOCR, ONNX, HuggingFace Transformers, Scikit-learn, Image Classification, OCR Pipelines
MLOps & Deployment	AWS EC2, Docker, GitHub Actions CI/CD, CUDA (NVIDIA GPU), ONNX Runtime, App Runner
Backend & APIs	C#, .NET 8, ASP.NET Core, REST APIs, JWT, OAuth 2.0, OIDC, Swagger, Entity Framework Core
Cloud & Data	AWS S3, Lambda, DynamoDB (PK/SK design), Cognito, SQL Server, MySQL
Languages / Frontend	Python, C#, R · React, Next.js, TypeScript, Tailwind CSS

Projects

ThinkMoves — Founder & ML Engineer *Jun 2025 – Present*

www.thinkmoves.com

- Built an end-to-end **Computer Vision pipeline** to digitise handwritten chess scoresheets into structured, queryable data — covering image preprocessing, classification, object detection, and handwriting recognition.
- Integrated **TrOCR** (handwritten OCR) models with **ONNX** runtime inference, deployed on **AWS EC2 with GPU** support for low-latency, scalable processing.
- Designed a multi-stage ML pipeline using **YOLO** for object detection and **OpenCV** for region segmentation prior to OCR, improving overall recognition accuracy.
- Managed **data labelling and annotation workflows in Roboflow** to build and iterate on custom training datasets; trained and evaluated models using **PyTorch**.
- Architected an **asynchronous, event-driven** image ingestion pipeline using **AWS Lambda + S3** with retry logic and error handling for concurrent uploads.
- Developed **.NET 8 / ASP.NET Core** backend APIs to orchestrate ML inference, manage job queues, and serve structured results to the frontend.
- Containerised all services with **Docker** and automated model deployments via **GitHub Actions CI/CD** for zero-downtime updates; designed DynamoDB schemas (PK/SK) for efficient ML output storage.

Experience

Software Engineer *Mar 2022 – Jun 2025*

Tata Consultancy Services (Client: United Airlines) · Chicago, USA

- Designed and developed scalable **REST APIs** using **.NET 8 / ASP.NET Core** and AWS services (S3, DynamoDB, Lambda, Cognito), supporting **1.5 M+ daily users**.
- Led migration of **21 M+ records** from SQL Server to DynamoDB with zero data loss, designing optimised PK/SK access patterns for high-throughput queries.
- Built **data analysis pipelines and predictive models** in Python and R for energy-usage optimisation, contributing to a **20% efficiency improvement**.
- Implemented secure authentication flows using **JWT**, **OAuth 2.0**, and **AWS Cognito (OIDC)**.
- Migrated legacy .NET applications to .NET 8 through architectural refactoring, improving performance, reliability, and maintainability.

Education

Master of Science in Computer Science *2019 – 2021*

DePaul University, Chicago, USA

Bachelor of Engineering in Computer Engineering *2013 – 2018*

Vishwakarma Institute of Information Technology, Pune, India