

SOMNATH ROY

AI APPLICATION DEVELOPER

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PROFESSIONAL SUMMARY

6+ years building production Agentic AI systems, computer vision pipelines, and multi-modal Vision-Language Models (YOLOv8, CrewAI, Claude Sonnet 4.5). Architected Vision IQ transforming unstructured images/PDFs into structured data via simple english input instruction from user. Deployed scalable ML solutions with FastAPI, Jenkins, PostgreSQL, Docker.

PROFESSIONAL EXPERIENCE

Data Scientist (Image Processing Specialist)

Aria Intelligent Solutions | June 2024 – Present

HarmonIQ – Vision IQ (Agentic AI Visual Intelligence Engine)

- Architected proprietary Agentic AI system (Vision IQ) using CrewAI + Claude Sonnet 4.5 transforming unstructured images/PDFs into structured machine-readable data
- Engineered computer vision pipelines autonomously extracting granular attributes (color, pattern, texture, shape) replacing manual tagging with automated analysis
- Deployed production system with FastAPI endpoints, PostgreSQL, Docker, DVC, Jenkins CI/CD achieving high-speed processing

Fashion E-commerce Computer Vision Solutions

- Improved classification accuracy 60%→88% implementing Vision-Language Models replacing ViT/FastRCNN
- Built end-to-end ML pipeline reducing product onboarding time by 70% processing 15K+ products monthly
- Led LLM-based attribute extraction improving categorization efficiency by 88% using Bedrock Runtime APIs

Technical Lead – AI Projects

HCL Technologies | Mar 2022 – Apr 2024

- Led cross-functional team of 5 engineers in P&ID diagram analysis project using **YOLOv7 + SAHI** achieving **99.2%** accuracy.
- Architected object-text association module with JSON output pipeline.
- Oversaw sprint planning and stakeholder coordination, deployed module in PCS Neo.

Senior Computer Vision Engineer

CAST Technologies | May 2021 – Feb 2022

- Developed privacy-aware depth-based video surveillance system using Intel **D435i/D455/L515** and **Jetson Nano/Rpi4B**.
- Developed video surveillance system that works without failure under any kind of lighting conditions with active modules for different anomaly detection.
- Achieved **94.2%** mask detection accuracy in low-res CCTV feeds.
- Built **real-time alert (call and sms) + GCP communication systems** with local backend for IOT devices.

Computer Vision & ML Engineer

Acviss Technologies | Oct 2020 – Jul 2021

- Created **Scamfindr** AI tool combining web scraping, review analysis, and NLP scoring.
- Designed anti-counterfeit cryptographic code scanner integrated with the [Certify app](#).

ML Engineer

Avantari Technologies | Jul 2019 – Nov 2020

- Developed smartwatch-based **eating/smoking detection** algorithms (93% accuracy).
- Built HAR models (96% accuracy) with extensive custom dataset generation.

Field Engineer

Voyants Solution Pvt Ltd | June 2016-Aug 2017

- Worked as a TPIA inspector at WBSEDCL, West Bengal and REC, Bhopal in RGGVY-XII project.

Project Trainee

Center for Artificial Intelligence &Robotics, DRDO | July 2018-June 2019

TECHNICAL SKILLS

Agentic AI & Frameworks: CrewAI, Anthropic Claude Sonnet 4.5, PyTorch, TensorFlow, YOLOv7/v8, OpenCV

Computer Vision: Object Detection, Segmentation, Attribute Extraction, Depth Estimation, Video Analytics

Backend & DevOps: FastAPI, Python, Docker, Jenkins, DVC, Git/GitHub, REST APIs

Cloud & Database: AWS, GCP, PostgreSQL Hardware: NVIDIA Jetson, Intel RealSense D435i/L515, Raspberry Pi

EDUCATION

Master of Technology – Intelligent Automation & Robotics

Jadavpur University – 2019 | CGPA: 8.92

Bachelor of Technology – Electrical Engineering

Aryabhatta Institute of Engineering & Management – 2015 | CGPA: 8.02

PERSONAL PROJECTS

Depth Image Generation and Comparison

Predicted depth image from smartphone RGB using MSE/SSIM validation.

[GitHub Link](#)

YOLOv8-based Detection, Segmentation and Tracking

Used YOLOv8 with Google Drive integration on Colab for training and results export.

[GitHub Link](#)

PUBLICATIONS

- A Method to Detect Blink from EEG Signal, ICICC 2019 ([DOI Link](#))
- Saccade and Fixation Detection from EOG, iSES 2019 ([DOI Link](#))

CERTIFICATIONS

- Deep Learning Specialization – Coursera ([Certificate Link](#))
- Introduction to TensorFlow for AI/ML/DL – Coursera ([Certificate Link](#))