

PARAM SHARMA

AI/ML Engineer

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PROFESSIONAL SUMMARY

Computer Science graduate and **AI/ML Engineer** specializing in **Computer Vision**, **Edge AI**, and **Deep Learning** model architecture. Authored multiple peer-reviewed publications and open-source datasets, showcasing expertise in **Swin Transformers**, **MobileNet**, and custom optimization algorithms. Proficient in PyTorch, Python, C++, and MLOps tools, with a passion for developing high-accuracy, scalable AI solutions.

WORK EXPERIENCE

AI/ML Engineer | Full-time

MaxBrain Technologies

May 2025 - Present
On-site • Jaipur, India

Plant Disease Detection System (FasalSaathi)

- Architected CNN models for **crop disease diagnosis**, releasing 2 open-source datasets on IEEE DataPort, achieving over **9,000 downloads** and **335+ ratings**.
- Deployed the FasalSaathi real-time Android app on Google Play Store for **farmer disease detection**, receiving notable coverage from **Punjab Kesari**.
- Patented an IoT hardware device under the Government of India to **automate agricultural data collection** and generate field-level disease datasets.

Brain Tumour Classification (Swin-GWO-Net++)

- Developed the Swin-GWO-Net++ hybrid transformer model, achieving **99.54% classification accuracy** across **102,600 BraTS 2021 brain MRI scans**.
 - Engineered a Dual Attention Fusion Module (DAFM), resulting in a **2.74% accuracy increase** over standard backpropagation in ablation studies.
 - Implemented Grad-CAM++ feature mapping to provide **visual explainability** and **clinical interpretability** for deep learning model predictions.
- Technologies / Skills Used : Python, PyTorch, CNN, Swin Transformers, Android Development, REST APIs, Docker, Model Deployment, Grad-CAM++, React, MongoDB*

PROJECTS

Real-Time Deep-Vision Football Analytics System | GitHub

Jan 2026 - Apr 2026

Project under College Professor

- Architected a production-grade CV pipeline for real-time MOT of 22+ players and ball, hitting 95%+ tracking accuracy on 60 FPS broadcast footage.
- Built real-time analytics for possession stats, spatial heat maps, and 3D-to-2D field projection with <200ms processing delay for match footage.
- Optimized YOLO-based object detection and feature extraction models, achieving a 35% reduction in inference latency for high-frame-rate streams.

Technologies / Tools Used : Python, PyTorch, YOLO, OpenCV, Multi-Object Tracking, Computer Vision, Deep Learning

Spotify Clone — Full-Stack Music Streaming Web Application | GitHub

Jan 2025 - Mar 2025

Self-Project

- Engineered a full-stack web application replicating **10+ core Spotify** features, including **dynamically** controlled playback and continuous audio streaming.
- Developed **15+ modular UI** components for playlists, search, and media browsing, reducing code redundancy by **30%** through modern state management.
- Implemented custom audio event listeners and asset optimization, achieving **<50ms** playback transition latency and **40%** faster initial page load.

Technologies / Tools Used : JavaScript, React, HTML5, CSS3, Node.js, Web Audio API, REST APIs

SKILLS

Programming Languages :

C++, Java, Python, JavaScript, TypeScript, SQL, Rust

Frameworks & Libraries :

Django, Flask, FastAPI, Next.js, React, Tailwind CSS

AI and Deep Learning :

PyTorch, TensorFlow, Scikit-learn, OpenCV, Keras, XGBoost, HuggingFace, vLLM, Unsloth, LangGraph

Tools & Platforms :

Git, GitHub, Docker, CI/CD, Kubernetes, AWS, Streamlit

EDUCATION

Birla Institute of Technology Mesra | Ranchi

Nov 2022 - Jun 2026

B.Tech CSE

CGPA : 8.3/10

Major in Computer Science and Engineering

University of Tokyo | Japan

Apr 2026 - Jul 2026

Matsuo Lab GCI Program

Selected for the Global Creator Intensive (GCI) — a 3-month AI/ML and Data Science program at Matsuo Laboratory, University of Tokyo. Covered deep learning theory, large-scale array computation, time-series analysis, unsupervised learning, and participated in global data competitions.

AWARDS & ACHIEVEMENTS

RESEARCH & PUBLICATIONS

- Authored 2 Peer-Reviewed AI/ML Research Papers:** Published main author research at **WCAIAA 2026** (TinyML MobileNet1D quantized to <1.5 MB with 92.77% accuracy) and co-authored plant disease diagnosis research in **Springer AIIS (MIND 2025)**.
- Published Open-Source Datasets:** Created and released the *Ridge Gourd Pathology Dataset* on **IEEE DataPort** (9,000+ downloads, 335+ ratings, featured in IEEE Aug 2025 Newsletter) and the *Brinjal Pathology Dataset* on **Mendeley Data**.
- Intellectual Property (IP):** Granted a **Government of India Design Patent** for an IoT-based automated agricultural data collection device.