Yash Maini

AI/MLOps Engineer

2× IEEE Author | **400+ DSA Problems** | **AWS • MLflow • Terraform**

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LinkedIn | GitHub | LeetCode

Experience

GGSIPU – USAR | Deep Learning Research **Jul 2024 – Present**

Undergraduate Research Associate *New Delhi*

- Led deep learning research in medical and agricultural imaging under mentorship of **Dr. Sanjay Kumar Singh** (GGSIPU) and **Dr. Pranshu Saxena** (Bennett University); authored 2 IEEE conference papers on image classification using **transfer learning** and **Bayesian optimization**.
- Achieved **97.23% accuracy** in tomato leaf disease classification using optimized **Xception model**; enhanced breast tumor classification to **98.46% accuracy** using fine-tuned CNNs with **Population-Based Training**.
- Currently leading a **journal-level study** on breast cancer detection using **MC Dropout** and **temperature scaling**, focusing on **model calibration** and **deployment readiness**.

M.K. Associates | Python, Excel, ML, EDA **Jan 2024 – Jun 2024**

Financial Data Analyst Intern *Part-Time (Remote)*

- **Data Analysis & Reporting:** Conducted EDA on **10K+ financial transactions**, identifying 150+ high-risk anomalies across **700+ client accounts**. Automated reporting workflows, **reducing manual effort by 40%**.
- **Machine Learning & Compliance:** Built supervised ML models for financial risk classification (**93% accuracy**), enhancing audit precision. **Collaborated with cross-functional teams** for regulatory compliance.

Technical Skills

Languages: Python, SQL, Bash, Java, JavaScript
Libraries & Frameworks: Scikit-learn, TensorFlow, Keras, NumPy, Pandas, Matplotlib, Seaborn
MLOps & Tools: DVC, MLflow, Docker, Git, GitHub Actions, Flask, FastAPI, Terraform, Grafana, DagsHub
Databases: MySQL, PostgreSQL, SQLite, MongoDB
Cloud (AWS): EC2, S3, Lambda, ECS, ECR, RDS, Bedrock, SageMaker, CloudWatch, IAM, CLI, CDK
Platforms: Linux, Windows, macOS

Education

University School of Automation and Robotics (GGSIPU) **Nov 2022 – May 2026 (Expected)**

Bachelor of Technology – AI & Machine Learning; ***GPA: 8.6 — Final Year Student*** *New Delhi, India*

- **Courses:** Artificial Intelligence, Machine Learning, Networking, Databases, Operating Systems, Data Structures, Analysis of Algorithms

Projects

CopyGuard – Serverless AI Code Detection Platform [Code] [Blog]

- **Technologies:** AWS Lambda, Bedrock Claude v2, Terraform, S3, CloudFront, Grafana, MLOps
- Engineered a production-grade platform to **detect AI-generated code** using Amazon Bedrock (Claude v2), achieving **<2s response** time and **∼99.9% availability**.
- Deployed full **IaC stack (API Gateway, IAM, CORS, logging) via Terraform & S3 + CloudFront.**
- **Monitored latency/confidence** metrics via **Grafana**; stored **outputs versioned in S3**.

ThreatMatrix – End-to-End MLOps Pipeline for Network Intrusion Detection [Code] [Blog]

- **Technologies:** Python, ML, FastAPI, MongoDB, MLflow, DagsHub, Docker, GitHub Actions (CI/CD), AWS EC2
- **Engineered a modular machine learning pipeline** encompassing data ingestion (MongoDB), validation, transformation, model training, and prediction, with reusable components organized under a custom internal package.
- **Containerized the entire pipeline using Docker**, automated builds, and versioning through GitHub Actions, and published secure images to **Amazon ECR**, enabling reproducible deployment workflows.
- **Deployed the FastAPI service on AWS EC2**, exposing real-time /train and /predict endpoints with sub-15 ms latency, after **evaluating multiple models and performing hyperparameter tuning** to optimize performance metrics tracked via **MLflow and DagsHub**.

Publications

- **Y. Maini**, S. K. Singh and P. Saxena, "**Xception for Tomato Leaf Disease Detection**: Hyperparameter Tuning and Fine-tuning Approaches," **2024 ICAIQSA**, Nagpur, India, [DOI] [Code] [Blog]
- **Y. Maini**, S. K. Singh and P. Saxena, "**Breast Tumor Classification** with Fine-Tuned Hyperparameter Training using Deep Learning Models," **2025 AI-Driven Smart Healthcare for Society 5.0**, Kolkata, India, [DOI] [Code] [Blog]

Achievements

- Ranked in the **top 11% globally on LeetCode**, with over **400 problems solved** across core DSA topics
- **Qualified GATE** 2025 (Data Science & AI) – Top 8% nationwide, reflecting strong CS and ML fundamentals