

# SHASHIKANT PRASAD

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## Professional Summary

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Machine Learning Engineer with expertise in Computer Vision, MLOps and multi-agent AI systems; engineered productionized solutions (LangGraph Teams chatbot, YOLO-based fault detection) that delivered 40% operational efficiency gains and 85% fewer field re-visits. Published at CVPR 2024 (ToonerGAN); proficient in Python, PyTorch, TensorFlow, Docker, SQL, LangChain/LangGraph and cloud deployments (GCP/Azure/AWS).

## Work Experience

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### Rakuten Mobile Inc.

March 2024 – Present

*Data Science Engineer*

- Drove a 40% efficiency improvement across key operational workflows through **AI-driven automation**, automating manual data processing and analytical tasks.
- Engineered a **multi-agent AI chatbot** leveraging agentic AI principles to fully automate L1 engineering operations, significantly reducing manual intervention.
- Pioneered a **real-time Computer Vision system** utilizing object detection models to identify installation errors during new site deployments and repairs, enabling immediate on-site correction and **reducing subsequent re-visits by 85%**.

### Scribe

Oct 2021 – Jan 2022

*Machine Learning Engineer Intern*

- \* Built web crawlers for 500+ news websites.
- \* Implemented Python scripts using BeautifulSoup.
- \* Tuned crawlers to scrape 10,000+ articles and simulated pagination for robust collection.

## Education

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### Indian Institute of Technology Jodhpur

July 2021 – May 2023

*Master of Technology in Artificial Intelligence*

CGPA 7.62

### Jharkhand Rai University

July 2017 – June 2021

*Bachelor of Technology in Computer Science and Engineering*

CGPA 8.96 (Gold Medal)

## Projects

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### AI Roaming Engineer (Microsoft Teams Chatbot for International Business BU) | *Langgraph, Langchain*

- \* Built an AI-powered virtual L1 Engineer to automate roaming operations—test creation, VIP tracking, ticketing, KPI reporting, anomaly detection, and data queries.
- \* Designed a **multi-agent LangGraph** system with a supervisor agent, integrated with MS Bot Framework, MySQL, MiNO Data Lake, and APIs for Teams-based automation.
- \* Improved operational efficiency by 40%, cutting manual effort, speeding troubleshooting, and enabling proactive network monitoring.

### Cell Fault Detection (Computer Vision for Telecom Site Deployments) | *PyTorch, CUDA, Scikit-learn, Docker*

- \* Built a computer vision solution to detect installation errors in new cell sites, enabling real-time fault identification during deployments and repairs.
- \* Trained a YOLOv11 object detection model on a small, imbalanced dataset using K-Fold Cross Validation and advanced image augmentation, then containerized with Docker and deployed to cloud for scalable inference via POST requests on multiple images.
- \* Delivered 83% recall on client test data and reduced re-visits by 85%, ensuring faster, more reliable network rollouts and lowering operational costs.

### ToonerGAN (CVPR 2024) – Reinforcing GANs for Obfuscating Automated Facial Indexing | *Python, PyTorch, CUDA*

- \* Published ToonerGAN, a GAN framework that generates high-res cartoon avatars to obfuscate identity from automated face indexing while remaining recognizable to humans.
- \* Combined style + de-identification modules trained on 23,000 images (ToonSet), balancing identity loss vs visual realism.
- \* Offers a practical path for privacy in facial data use—mitigates risks from AI-based facial indexing without totally losing human recognizability.

### Machine Learning-Based Autonomous Driving Vehicle | *C++, Python, OpenCV, Raspberry Pi*

- \* Designed a fully autonomous vehicle prototype that follows road curves and stops at traffic signs.
- \* Trained a Haar-Cascade classifier using 50 positive / 300 negative samples; used image-feedback logic on Raspberry Pi to instruct Arduino Uno for steering (8-bit intensity 0-255) via motor driver.
- \* Enabled end-to-end autonomous control, removing human steering intervention and replicating key behavior of self-driving vehicles.

### Generation of Maps from Satellite Images | *Python, PyTorch, OpenCV*

- \* Built a pix2pix GAN from scratch, minimizing generator loss and discriminator loss to 5.
- \* Defeated presently available pix2pix GAN for majority of test samples on the basis of SSIM Score.

### Neural Architecture Search Using Genetic Algorithm | *Python, Tensorflow, CNN*

- \* Applying a neural architectural search consisting of Convolutional Neural Networks, on Fashion MNIST dataset.
- \* Using Genetic Algorithm to find the best Neural architecture by denoting each one using a unique genome Sequence.
- \* Found a CNN architecture with just 11,000 parameter with a test accuracy of 85%.

### Technical Skills

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**Languages:** Python, C, C++, CUDA

**Developer Tools:** VS Code, Google Cloud Platform, Android Studio, Tensorflow, PyTorch, Langchain, Langgraph, Docker, AWS, Azure, Wandb, Roboflow

**Technologies/Frameworks:** Linux, GitHub, Arduino

### Achievements and Extracurricular Activities

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- \* Published research paper “**ToonerGAN: Reinforcing GANs for Obfuscating Automated Facial Indexing**” at **CVPR 2024**, one of the top-tier conferences in computer vision.
- \* Qualified **GATE** with 98.2 percentile in 2021.
- \* Member of Robotics Society at IIT Jodhpur, actively working in AI-ML Implementation.
- \* Teaching Assistant at IIT Jodhpur for courses like **MLOps (CSL7040)**, **Deep Learning (CSL7590)**, and **DLOps (CSP7030)**.