



ABHISHEK KUMAR SHUKLA

Founder - Gudsky Research Foundation | Senior AI Developer, UniConverge Technologies

+91 9305641151 | abhishekshukla2421@gmail.com

linkedin.com/in/researcher-abhishek-kumar-shukla | gudsky.org

Howrah, West Bengal, India

PROFESSIONAL SUMMARY

Founder of Gudsky Research Foundation (Section 8 Non-Profit · DPIIT · AICTE · ISO · NGO Darpan certified) and Senior AI Developer with 4+ years of experience in research, development, and algorithm enhancement. Specialising in Vision-Language Models (VLMs), Hybrid AI Architectures, Computer Vision, LLMs, and NLP. Author of 12 peer-reviewed publications, 1 filed patent, and winner of the Best Paper Presenter Award (3rd Rank) at ICUS 2024. Built and scaled a community of 850+ researchers.

EXPERIENCE

Gudsky Research Foundation

Sep 2022 – Present

Founder

- Founder of India's end-to-end AI & Robotics research ecosystem - a Section 8 Non-Profit formally incorporated with DPIIT, AICTE, ISO, and NGO Darpan certifications.
- Built and scaled a community of **850+ researchers**.
- Guided 15 students to publication in IEEE and Springer, with zero profit extracted - 100% reinvested into R&D.
- Designed a unique project selection framework: **70% industrial implementation · 20% theoretical advancement · 10% skill development**.
- Organised 40+ webinars, seminars, and workshops training students across India in AI, IoT, and research methodology.
- Best Paper Presenter Award won by Gudsky researchers at ICUS 2024; Railway Automation paper published at IEEE (Apr 2025).

UniConverge Technologies Pvt. Ltd

Jan 2026 – Present

Senior AI Developer

- Leading end-to-end design, build, and deployment of advanced AI systems - VLMs, Hybrid AI Architectures and LLMs.
- Architecting multi-modal AI pipelines and defining inference strategies optimised for production environments.
- Currently working on: AI Search (Visual Similarity Search using Grounding DINO + CLIP), Queue Monitoring & People Counting, Anomaly Detection, AI Automation, and LLM development.
- Mentoring and supporting junior AI developers across project modules.
- Translating research and architecture decisions into clean, efficient, and scalable Python code.

UniConverge Technologies Pvt. Ltd

Jun 2025 – Dec 2025

AI/ML Support Engineer

- Built computer vision models for CCTV-based queue detection with real-time alarm triggering on anomaly events.
- Developed RESTful APIs connecting AWS SageMaker-hosted models to frontend applications.
- Collaborated with the DevOps team on full AWS SageMaker pipeline setup and deployment.

UniConverge Technologies Pvt. Ltd

Mar 2025 – Apr 2025

Technical Trainer

- Designed and delivered a structured AI/ML training programme for **400+ participants**.
- Set up 5G, AI, and IoT labs as part of freelance training infrastructure development.
- Curriculum covered Python for AI, model fine-tuning, deployment pipelines, and prompt engineering - aligned with real industry workflows.

Future18 Digital

Mar 2024 – Mar 2025 · Maharashtra

AI Research Engineer

- Conducted applied research in computer vision and NLP to build AI-driven systems for industrial use cases.

- Designed deep learning models for real-time activity detection and advanced spam filtering algorithms.
- Led datacenter feasibility research across the Amboli and Nandurbar regions - translated field findings into structured technical documentation.
- Co-authored a peer-reviewed research paper on spam filtering and web-mail system performance under the guidance of the Founder.

Future18 Digital

Jul 2023 – Jan 2024 · Maharashtra

AI & ML Engineer Intern

- Developed key functionalities for an enterprise web-mail system: email composition, attachment handling, spam filtering, and threading.
- Designed test functions to evaluate system performance, ensuring reliability and scalability.
- Built foundational experience in industrial research workflows - progressed to AI Research Engineer within 8 months.

EDUCATION

Gulzar Group of Institutes, Ludhiana

Sep 2020 – Jun 2024

BTech — CSE (AI & ML)

- CGPA: 7.64 / 10
- Major Project: Enhancing Efficiency and Functionality of Voice-Controlled Cars Through NLP Techniques and Additional Features
- Award: 3rd Rank - Best Paper Presenter, Soft Computing Research Society, ICUS 2024
- Research Output: 10 peer-reviewed publications and 1 filed patent completed during undergraduate study
- Relevant Coursework: Deep Learning, Computer Vision, NLP, Data Structures & Algorithms, IoT Systems
- Industry Exposure: Visited DRDO-RCI under the mentorship of K.J.S. Gill
- Research Mentored by: Prof. Ashish Bhaetja (paper mentor) · Dr. Sita Rani (first research exposure)
- Positions: Chairman, ISTE Student Chapter, GGI (2023–2024) · Member, Soft Computing Research Society (2024–2025)

Holy Home School, Serampore

Apr 2017 – Jul 2020

Class 12 — PCM + Computer Science

SKILLS

- **Programming Languages:** Python, C, C++, R, Rust.
- **AI/ML Frameworks:** PyTorch, TensorFlow, Keras, HuggingFace Transformers, OpenCV, YOLO, NLTK.
- **Specialisations:** Vision-Language Models (VLMs), ViT, LLM Fine-tuning, RAG, GAN, CNN, Prompt Engineering, Hybrid AI Architectures.
- **MLOps & Cloud:** AWS SageMaker, AWS Lambda, EC2, AWS S3, Docker, Git, CI/CD, AI Automation.
- **Research & Development:** Model Review, Literature Survey, Methodology, Audit Report, Technical Diagrams & Tables, Proposal Writing.
- **Other Tech:** Computer Vision, Machine Learning, NLP, Deep Learning, IoT, Embedded C++ (Arduino), Image Annotation, Image Processing, Data Science, Database (PostgreSQL, SQL), Nvidia Model API (High Powered pretrained model direct usage without training), Claude API.
- **Non – Tech:** Presentation, Docs, Excel, Notion, Team Management, Leadership, Project Documentation.

PUBLICATIONS (11 TOTAL)

Google Scholar: [{Link}](#)

IEEE Published

- **Automating Indian Railway Services: A Face Recognition-Based Approach to Queue Management and Ticket Booking** - IEEE · Apr 16, 2025, [{Link}](#)
- **Design and Implementation of an IoT-based AI Surveillance Car with Obstacle Detection, Line Following, and Live Streaming** - IEEE · Jul 14, 2023, [{Link}](#)

- **Implementation of IoT-Based Smart Irrigation System for Agricultural Transformation** - IEEE · Sep 10, 2023, [{Link}](#)

Springer Published

- **Enhancing Efficiency and Functionality of Voice-Controlled Cars Through NLP Techniques and Additional Features** — Springer Nature Link · Oct 23, 2024, [{Link}](#)
- **Streamlining Banking Operations: A Computer Vision-Based Queue Management System for Improved Customer Service** — Springer Nature Link · Oct 1, 2025, [{Link}](#)

Rpinnacle Publications

- **Future18's AI-Driven Webmail: A Secure and Reliable Solution for Modern Enterprises** - Rpinnacle Publications · Jan 27, 2026, [{Link}](#)
- **Improved Safety and Communication for Railway Track Maintenance Workers Using IoT-Enabled Alert System** - Rpinnacle Publisher · Jan 24, 2025, [{Link}](#)
- **Tackling the Overlooked Problem: A Novel Approach for Healthcare Systems by IoT** - Rpinnacle Publisher · Jan 24, 2025, [{Link}](#)

Conference & Other Peer-Reviewed

- **Voice-Controlled Car Prototype: Advancing Human-Machine Interface with NLP and Wireless Communication** - Soft Computing Research Society · Apr 20, 2024, [{Link}](#)
- **Analysis of Inventory Turnover Performance within Indian Supermarket** - Intl. Conference on Recent Trends in Engineering and Science for Resource Optimization and Sustainable Development · Feb 1, 2024, [{Link}](#)
- **Employing Machine Learning to Track Students' Academic Progress and Learning Outcomes Across Schools** - National Conference on Internet of Things, NIT Kurukshetra · Feb 25, 2023, [{Link}](#)
- **Interference Mitigation Techniques in Cellular Vehicle-to-Everything (CV2X) Communications** - The Hill Publication (Book Chapter, Vol. 26, Multidisciplinary Approach in Arts, Science & Commerce) · Jul 7, 2023, [{Link}](#)

PATENT

Sensor-Based Automated Speed Control System (Method and Device) for Smart Vehicles Using Image Feature Extraction

- **Patent Application No.:** 202211035677 | Issued: January 7, 2022 | Ministry of Commerce and Industry, Government of India
- **Certificate:** drive.google.com/file/d/198XOVsyMo3cSYyKIcdZBNXRIWTqiBBml/view

KEY PROJECTS

Vision-Language Models & Generative AI

- **VisionIQ (Nov 2025 – Mar 2026) [Gudsky Research Foundation]:** Multi-modal AI system extending a language model to understand images and text simultaneously. Connects a visual encoder to an LLM for image-text reasoning and Q&A. | GitHub: [gudskyresearchfoundation/Video-Understanding-AI](https://github.com/gudskyresearchfoundation/Video-Understanding-AI)
- **GRF-2025-02: AI-Driven Precision Agriculture [Gudsky Research Foundation]:** Full-stack AI farming decision support system with 6 integrated ML/AI modules: Crop Disease Detection (MobileNetV2, 95%+ accuracy), Yield Prediction (CatBoost, 96.48% R²), Weather Forecast (Open-Meteo API), Soil Health Analysis, Irrigation Optimizer, and Pest Risk Assessment. Features Balarama Ji — a Claude-powered divine farm advisor chatbot. Built on FastAPI + Lightning.ai L4 GPU. | GitHub: [Abhishek242001](https://github.com/Abhishek242001)

AI Agents & Automation

- **UCT Instagram Agent / UCT ClawGram [UCT]:** AI-powered Instagram management system via Telegram bot. Stack: OpenClaw agent runtime + Anthropic Claude (captions, hashtags, analytics) + Composio MCP (Instagram publishing) + Google Gemini (image/video generation) + Lightning.ai L4 GPU. Features: image posting, carousel posts, video reels, AI caption generation, content analytics dashboard. | GitHub: [IOTAcademyAIProjects/uct-insta-agent](https://github.com/IOTAcademyAIProjects/uct-insta-agent)
- **GudSky Staff Portal — Task Management AI [Gudsky Research Foundation]:** Full-stack HR & task management system. Backend: FastAPI + PostgreSQL (Neon). Frontend: React (Vite). Deployed on Vercel. Roles: Admin / HR / Employee with check-in/out, work logs, warnings, announcements, and attendance tracking. | Live: [Portal URL](#)

Computer Vision & Re-Identification

- **MICRO-TRACK: Modular Industrial Multi-Camera Re-ID & Open-Set Tracking [UCT]:** Production-grade multi-camera Person Re-Identification and open-set tracking system for industrial surveillance. Modular architecture for scalable deployment. | GitHub: [Abhishek242001/MICRO-TRACK](https://github.com/Abhishek242001/MICRO-TRACK)
- **ReID ETLT Converter [UCT]:** End-to-end NVIDIA ReID model conversion pipeline: .etlt → .onnx → TensorRT .engine. Uses TAO Toolkit + Docker for decryption, trtexec for FP16 TensorRT compilation. ResNet-50 backbone trained on Market-1501 + AICityChallenge. | GitHub: [Abhishek242001/reid-etlt-converter](https://github.com/Abhishek242001/reid-etlt-converter)
- **YOLOv11m Head Detection [UCT]:** Custom-trained YOLOv11m person head detector with optimised training pipeline across Google Colab (T4), Lightning.ai (L40S, 47.7GB VRAM), and Kaggle. Features: cosine LR, AMP FP16, copy-paste augmentation, TTA, TensorRT export. mAP@50: ~0.84–0.88 on L40S. | GitHub: [Abhishek242001/head-detection-colab-kaggle-lightning](https://github.com/Abhishek242001/head-detection-colab-kaggle-lightning)
- **AI Search (Visual Similarity Search) [UCT]:** Multi-model pipeline: Grounding DINO + Ultralytics CLIP for intelligent visual similarity retrieval in production.
- **Queue Monitoring & People Counting [UCT]:** Fine-tuned YOLOv8 with person re-identification and average dwell time analytics. Deployed on AWS SageMaker.
- **Anomaly Detection System [UCT]:** CCTV-based real-time anomaly detection with alarm triggering. AWS SageMaker backend.
- **Face Recognition-Based Banking System:** Secure banking system for withdrawals/deposits via face recognition. 91% accuracy.
- **Automating Indian Railway Services:** Face recognition-based queue management and automated ticket booking system for Indian Railways. Published at IEEE (Apr 2025).
- **IoT AI Surveillance Car (ESP32-CAM):** Autonomous vehicle with IR sensing, line following, obstacle detection, and live web streaming. Arduino + ESP32-CAM. Published IEEE ICSCCC 2023.

NLP & Language Models

- **Voice-Controlled Car (NLP + Arduino):** Voice command interpretation with NLP. Response time under 500ms. 3rd Rank Best Paper, ICUS 2024. Published Springer 2024.
- **Spam Filtering & Web-Mail System [Future18]:** Enterprise web-mail platform with advanced spam filtering, threading, and performance benchmarking.

IoT & Embedded Systems

- **Railway Track Maintenance IoT Alert System:** Wearable IoT safety alert system for track workers — detects approaching trains and triggers real-time alerts. Published 2025.
- **IoT Smart Irrigation System:** Sensor-driven precision agriculture system — monitors soil moisture and weather data to automate irrigation. Published 2023.
- **Healthcare IoT System:** Novel IoT framework for patient monitoring in underserved healthcare settings. Published 2025.

Machine Learning & Data

- **Student Progress Tracking LMS (ML):** Desktop-based LMS with ML algorithms for attendance, marks analysis, and automated notifications. Presented at NIT Kurukshetra, NCIE-2023.
- **Inventory Turnover Analysis — Indian Supermarket:** ML-based analysis of inventory turnover performance patterns in Indian supermarket chains.
- **CV2X Interference Mitigation Research:** Book chapter on Interference Mitigation in Cellular Vehicle-to-Everything (CV2X) Communications. The Hill Publication, Vol. 26.

AWARDS & ACHIEVEMENTS

- Best Paper Presenter Award — 3rd Rank, ICUS 2024, Soft Computing Research Society
- Chairman, ISTE Student Chapter — Gulzar Group of Institutes (2023–2024)
- Gudsky researchers published in IEEE and Springer under my mentorship (2023–2025)
- DRDO-RCI Research Visit — selected for industry exposure under K.J.S. Gill

CERTIFICATIONS

- IBM AI Engineering Professional Certificate — Coursera (Ongoing)
- Machine Learning Operations Specialisation — Coursera
- AI Capstone Project with Deep Learning — Coursera
- Computer Architecture — NPTEL
- Introduction to Machine Learning — NPTEL
- Data Science Using Python — RemarkSkill
- Python Internship — Pantech Solutions