Yash Rajesh Garad

Final Year Undergraduate, B.E. Artificial Intelligence | St. Vincent Pallotti College of Engineering & Technology, Nagpur
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Education

B.E. Artificial Intelligence *2023 – 2027*
St. Vincent Pallotti College of Engg. & Tech., Nagpur
CGPA: 8.32/10

Experience

RNR Innotech *Jun'26 – Present*
AI Developer Intern
- Building AI modules for **RIM ai ERP**: **invoice scanning**, **inventory forecasting**, a 24/7 **business chat assistant** and **analytics reports**.

Acube AI *Jun'26 – Present*
ML Engineer Intern
- Machine learning engineering on applied AI products.

MRSAC, Nagpur *1 Aug'26 – 1 Sep'26*
Research Intern
- Built a seven-layer **pluvial-flood nowcasting digital twin** for **Kolhapur city** on open remote-sensing data and **back-tested** its skill honestly.

AI Developer Lead, SVPCET *2024 – Present*
- Leads student AI builds in the **Department of Artificial Intelligence**.

Achievements

- **1st rank**, Microsoft Nirmaan AI Hackathon.
- **3rd Prize**, Webbotix National Departmental Level Hackathon, Dept. of AI, SVPCET.
- **2nd best project** (software category) for College Assistant.
- **Top 15** in multiple national-level hackathons and innovation competitions.

Technical Skills

- **Programming:** Python, C, SQL, R, TypeScript, JavaScript
- **Analytics:** Power BI, Tableau, Excel, Statistical Analysis, EDA
- **AI/ML:** ML, Deep Learning, Gen AI, RAG, LangChain, LangGraph, MCP, GNNs, Transformers, YOLO, OpenCV
- **Frameworks:** FastAPI, React, Next.js, NestJS, Django, TensorFlow, PyTorch, Scikit-Learn, Pandas
- **Databases:** MySQL, PostgreSQL, MongoDB, Firebase, PostGIS, Qdrant
- **Cloud & DevOps:** Docker, Kubernetes, OCI, AWS, GitHub Actions, MLflow, Airflow, Kafka, Terraform
- **Soft Skills:** Problem Solving, Critical Thinking, Adaptability, Teamwork, Communication

Relevant Courses

Data Structures & Algorithms • Machine Learning • Deep Learning • Natural Language Processing • Computer Vision • Generative AI • Cloud Computing • Database Systems

Key Projects

Skill Sphere *Aug'26*
- AI mobile assessment platform (**presented at ICAPSAS-26**) with **real-time adaptive testing** and **GenAI question generation** over a hybrid AI + expert-curated question bank.
- App-level **integrity layer**: screenshot restriction, disabled backtracking, **behavioural anomaly detection**, violation escalation and auto-submit; **email OTP** and token sessions.

College Assistant *Aug'26 – Oct'26*
- Major project, **2nd best (software)**: fully **offline multi-agent assistant** (router, SQL, RAG, synthesis, **verification** agents) over university data on **Ollama**, **Qdrant**, **PostgreSQL**, Django + React and Docker Compose.

Agentic Linear Algebra Tutor *Oct'26 – Present*
- Multi-agent tutor whose **SymPy verification agent** checks every claim and student step; **misconception taxonomy** from real solutions, benchmarked vs. unverified LLMs.

EdgeSeiz-Net *Sep'26 – Oct'26*
- Lightweight **EEG seizure detector** for **ESP32**, trained **patient-independently** on **CHB-MIT** and evaluated on 159 h of unseen-patient EEG.

AgroSense AI *May'26*
- **Rainfall**, **crop-yield** and **climate-risk** forecasting for 11 Vidarbha districts with **XGBoost, LSTM, Transformers, GNNs**, FastAPI, MLflow, PostgreSQL and farmer alerts.

AadhaarX *May'26 – Jun'26*
- **ArcFace face matching**, **liveness detection**, fraud intelligence and audit trail on **Next.js, NestJS, TypeScript**, Docker and Kubernetes.

RouteIQ X *Jul'26*
- Geospatial AI for **predictive road maintenance** and infrastructure health with FastAPI, React, PostGIS, Kafka, Airflow, XGBoost and LSTM.

More Projects

- **IntruShield** – NSL-KDD intrusion detection with SHAP.
- **PPE Compliance Vision** – YOLO workplace-safety monitoring.
- **Multilingual Sarcasm Detection** – code-mixed text, BiLSTM vs. XLM-R.
- **CLARITY-CT Evidence** – evidence base for an XAI review.
- **MathGPT** – Gemini + Lean 4 + SymPy maths.
- **ADHYAYAN** – offline study-assistant agent.
- **SwarKavach** – voice-clone detection, SIH 2026.
- **PolicyPulse** – MGNREGA analytics and NLP.
- **UrduGuard** – Urdu moderation with LIME.
- **Accident Detection System** – real-time YOLO crash alerts.
- **MedBridge AI** – rural triage (MERN, Gemini).
- **GAIA Geospatial Dashboard** – census, NDVI and seismic GIS.
- **Smart Resume Screener** – TF-IDF resume–job matching.
- **AFTERMIND** – LLM cognitive twin graph.
- **LoRa V2V ADAS** – V2V collision warnings.
- **Food Waste Reduction System** – donor–NGO matching.

PUBLICATIONS (14)

Presented

[1] *Skill Sphere: An AI-Driven Platform for Personalized Skill Assessment and Career-Oriented Learning.* Vikas G. Bhowate, Dinesh S. Banabakode, **Yash Rajesh Garad**, Prasun C. Shamkule, Somesh U. Ninawe. International Conference on Applied Probability and Statistical Analysis (ICAPSAS-26), Trivandrum, 23 Aug 2026.

Under revision

[2] *FireVisionNet: A Hybrid Deep Learning Framework for Intelligent Forest Fire Detection and Surveillance.* Vikas Bhowate, Vishal Tiwari, Rihal Kalbende, **Yash Rajesh Garad**, Aanchal Kalambe, Harshal Ninawe. Kufa Journal of Engineering.

Submitted

[3] *AI-Driven Predictive Analytics and Supply Chain Resilience in Indian Organized Retail.* Vikas G. Bhowate, Aditi A. Parshivanikar, Om P. Gawande, **Yash Rajesh Garad**. International Journal of Management and Decision Making (Inderscience).

[4] *PPE Compliance Monitoring with YOLOv11.* **Yash Rajesh Garad**, with co-authors from SVPCET. ICSIT 2026.

In preparation

[5] *Verification-Guided Agentic AI Tutoring for Linear Algebra: A Review and Framework.* **Yash Rajesh Garad** (corresponding author), Atish M. Gour, Om P. Gawande, Stanly Wilson. Target: Education and Information Technologies.

[6] *Agentic, Offline, and Private: A Local RAG–SQL System for University Data Management.* Aditi A. Parshivanikar, Harshal S. Ninawe, Aanchal N. Kalambe, Om P. Gawande, **Yash Rajesh Garad**, Vikas G. Bhowate.

[7] *CLARITY-CT: Explainable Artificial Intelligence for Chest CT, A Review.* Vikas G. Bhowate, Aditi A. Parshivanikar, Om P. Gawande, **Yash Rajesh Garad**.

[8] *A Pluvial-Flood Nowcasting Digital Twin for Kolhapur City.* **Yash Rajesh Garad**, with co-authors from MRSAC and SVPCET. Target: Modeling Earth Systems and Environment.

[9] *Physics as Structural Architecture: A Leakage-Controlled Cold-Start Evaluation of Physics-Assisted Renewable Power Forecasting.* Vikas Bhowate, Aditi Parshivanikar, Om Gawande, **Yash Rajesh Garad**.

[10] *Hybrid Agentic RAG and Text-to-SQL Systems: A Review-Derived Taxonomy, Comparative Analysis and Research Agenda.* **Yash Rajesh Garad**, with co-authors from the Department of AI, SVPCET.

[11] *Cooperative V2V Collision-Risk Prediction over a LoRa Mesh: A Feasibility Study.* **Yash Rajesh Garad**, with co-authors from the Department of AI, SVPCET.

[12] *EEG-Based Depth of Anaesthesia Estimation using Bi-LSTM and RAG Models.* Dinesh S. Banabakode, Thawakar, Patne, Lokhande, **Yash Rajesh Garad**, Om P. Gawande.

[13] *An Agentic AI Layer for SME ERP: The RIM ai ERP Case Study.* Pooja Wagh, Nitin Mohane, **Yash Rajesh Garad**, Om Gawande, Harshal Ninawe, Somesh Ninawe.

[14] *BioShield-Rail: AI Bot Detection and Fair Queuing for Tatkal Railway Booking.* Vikrant P. Katekar, Dinesh S. Banabakode, Om P. Gawande, **Yash Rajesh Garad**, Harshal S. Ninawe, Palak V. Khonde, Aanchal N. Kalambe.

CERTIFICATIONS (18)

- OCI 2025 Certified Generative AI Professional, *Oracle*
- Fundamentals of Deep Learning, *NVIDIA Deep Learning Institute*
- Introduction to Machine Learning, *NPTEL*
- Geocomputation and Geo-web Services, *IIRS, ISRO*
- Introduction to LangGraph, *LangChain Academy*
- LangSmith Essentials, *LangChain Academy*
- Agent Observability & Evaluations, *LangChain Academy*
- Claude with the Anthropic API, *Anthropic*
- Introduction to Model Context Protocol (MCP), *Anthropic*
- Career Essentials in Generative AI, *Microsoft & LinkedIn*
- Foundations of Prompt Engineering, *AWS*
- AI Security & Governance, *Securiti*
- Introduction to Modern AI, *Cisco*
- AI Appreciate, *Intel*
- AI for Entrepreneurship, *Intel*
- Machine Learning: Dimensionality Reduction, *IBM*
- Chatbot Development, *Nasscom Foundation*
- AI in Pharma, *NCVET, Government of India*