

Tanmay Mirgal

Full-Stack Engineer | ML/DL & MLOps Engineer | AI, Data Science & Computer Vision

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SUMMARY

Full-stack engineer who treats AI/ML as a core skill, not a buzzword. Built secure, mission-critical systems for the Indian Navy at Tata Advanced Systems, and shipped production features on a live e-commerce platform at VigyBag. Experience spans MERN development, MLOps pipelines, RAG systems, and computer vision — backed by a published research paper, two hackathon wins, and active open-source contribution.

TECHNICAL SKILLS

- **Languages & Frameworks:** JavaScript (ES6+), TypeScript, Python, R, React.js, Next.js, Node.js, Express.js, FastAPI
- **ML / AI / Data Science:** TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, XGBoost, OpenCV, RAG, Deep Learning, Predictive Modeling, Feature Engineering, EDA, Statistical Analysis, NLP, Time-Series Forecasting
- **MLOps & Pipelines:** MLflow, Apache Airflow (Astronomer), DagsHub, GitHub Actions, Grafana
- **Cloud & DevOps:** AWS (SageMaker, S3, RDS), Docker, Kubernetes, Nginx, CI/CD, Vercel, Linux
- **Databases:** MongoDB, PostgreSQL, Redis, Convex, Supabase
- **Backend & Auth:** REST APIs, WebSockets, WebRTC, JWT, OAuth 2.0, Prisma, Drizzle, Mongoose
- **Mobile & UI:** React Native, Expo, Tailwind CSS, Shadcn/UI, Framer Motion, Redux
- **Tools:** Postman, Jest, Jupyter Notebook, Jira, Bitbucket, Confluence, Git, Agile/Scrum

WORK EXPERIENCE

Tata Advanced Systems Ltd. (TASL) *Software Engineer Intern*

Mumbai, India | 2024 – 2025

- Engineered CTS-71, a confidential high-fidelity naval simulation platform replicating real-world Combat Management Systems for the Indian Navy, built on the MERN stack with WebSockets.
- Authored Jest-based automated test suites for mission-critical modules; collaborated in Agile sprints using Jira, Bitbucket, and Confluence.
- Co-authored a peer-reviewed research paper on AI-driven capabilities in Naval Combat Management and Combat Training Systems.

VigyBag *Full Stack Engineer Intern*

Remote, India | 2025 – 2026

- Built and shipped features for a live e-commerce platform connecting rural artisans with urban consumers, using React.js and Express.js.
- Implemented MLOps workflows and RAG-based recommendation logic to improve product discovery and recommendations for eco-friendly products.
- Collaborated with the core team on scaling platform features for a marketplace connecting rural artisans to urban consumers.

Open Source Contributor *Top Contributor – E-commerce Platform (2nd on Leaderboard)*

Remote, India | 2024

- Contributed React.js UI components and Node.js backend features to an open-source e-commerce platform (182+ stars, 419+ forks) connecting rural artisans to urban consumers.
- Delivered product search, category filtering, and pricing comparison across 10+ categories.
- Reviewed pull requests and resolved issues following CI/CD guidelines; ranked 2nd on the contributor leaderboard.

PROJECTS

Slate *Next.js, TypeScript, React*

[Live Demo](#)

- Real-time collaborative whiteboard with an infinite canvas, multiplayer editing, and live cursor presence for brainstorming and system-design sessions.

Orb *Next.js, Redis, PostgreSQL, MinIO, Docker, Better Auth, AWS (EC2)*

[Live Demo](#)

- Self-hosted deployment platform — connects a GitHub repo, builds it inside a sandboxed Docker container, stores artifacts in MinIO, and serves it via a built-in edge proxy with automatic SSL and live logs.

Samadhan *1st Place, Internal Hackathon 2025 – Vidyalankar Polytechnic | Next.js, TypeScript, Expo, Convex, Tailwind CSS*

- AI civic-issue reporting ecosystem with real-time tracking and a cross-platform React Native app for citizen engagement.

Smart Meet *React, FastAPI, TensorFlow, OpenCV, Groq AI*

[Live Demo](#)

- Hackathon-built meeting platform pairing a custom WebRTC engine with AI-driven transcription to turn live conversations into actionable summaries.

Finch AI *Next.js, Flask, XGBoost, PostgreSQL, MLflow, DagsHub*

[Live Demo](#)

- ML-driven banking recommendation engine for 500+ users; deployed XGBoost models with full MLOps pipelines (MLflow, DagsHub, AWS RDS) for continuous retraining, and monitored performance via Grafana dashboards.

Cognix *React Native, Express.js, MongoDB, RAG, AWS SageMaker*

- Clinical cognitive-testing app using RAG for intelligent question generation; deployed on AWS SageMaker with automated retraining orchestrated via Apache Airflow (Astronomer).

EDUCATION

Vasantdada Patil Pratishthan's College of Engineering *B.E. in Information Technology*

2026 – 2028 (Expected)

Vidyalankar Polytechnic *Diploma in Computer Engineering*

2023 – 2026

Shardashram Vidyamandir International School

2011 – 2023

ACHIEVEMENTS & CERTIFICATIONS

- Winner – Industrial Hackathon 2026 (TATA) and Internal Hackathon 2025 (Vidyalankar Polytechnic – built Samadhan, an AI civic reporting platform).
- Research Paper Published – JAAFR Journal (2025): Peer-reviewed AI and engineering research.
- INNOVGENIUS Ideathon (TCS, 2025) participant; Top Contributor – GSSOC 2024 (GirlScript Summer of Code).

Certifications: Complete AI/ML & Data Science Bootcamp (Udemy); Generative AI for Software Development (IBM SkillsBuild); Intro to LLMs (Google Cloud); Postman API Fundamentals Student Expert