Pranav Karawale

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EDUCATION

University Of Mumbai
Bachelor of Engineering (Computer Engineering)   *Jun 2026 (Expected)*

WORK EXPERIENCE

Pravideon Pvt. Ltd.   **Navi Mumbai, IN**
Director & Co-Founder   *Oct. 2024 – Present*
(Company formally established Oct. 2024, building upon freelance project work initiated 01/2024)

- **Nirvanagni F.L.A.M.E Guardian:** Autonomous fire suppression system utilizing computer vision and PLC integration - Led AI model development (**75% accuracy/recall** with **150k dataset size**) and Modbus-based PLC integration, including hyperparameter tuning and dataset optimization, written in Python using TensorFlow.
- **Metadata Aggregator for Indian Court Cases:** Designed and implemented Metadata Aggregator developed for Supreme Court and High Court of India, processing **1.5 crore court records** with sorted court order PDFs for enhanced legal research.
- **Rangvarna:** Led mobile app for portable colour matching (triad spectrometer, RPi Zero), achieving 96% factory accuracy for paint QC, improving search & retrieval.
- **LMS for JEE/NEET/MHT-CET Aspirants:** Engineered a scalable backend for an LMS platform using Next.js (Node.js) and MongoDB on AWS, supporting **200,000+ questions**. Designed and implemented RESTful APIs for user management, real-time tests tracking, question query and retrieval, RBAC, security features.

Freelancing   **Remote**
Software Engineer   *Apr. 2023 – Dec. 2023*

- Contributed to the development of Launch AI, a React-based framework enabling the creation of **customizable AI agents** connecting with various apps for advisory, planning, and consultancy-based applications, involving UI/UX contributions, research, implementation of key features, and extensive prompt engineering.

PROJECTS

Ixora   *Node.js, TypeScript, CodeMirror 6*
CodeMirror 6 extension pack designed to transform it into a MS Word-like WYSIWYG editor supporting rich text formatting and editing.

Aetherline   *Python, OpenCV, Tesseract OCR, YOLO, Machine Learning, Next.js*
AI-based digitization software and smart knowledgebase for P&I (pipeline and instrumentations) diagrams.

Bratify   *Svelte, TypeScript, Node.js*
Album art generator written in Svelte inspired by Charli XCX's "BRAT" album design, handling **~50k monthly visits**.

Rosette   *TypeScript, Node.js*
Library and wrapper to leverage the database and structured format of Notion and convert it into a data source or a headless content management system for static or dynamic website frameworks.

AccessEye   *Python, OpenCV, YOLO, Machine Learning, FastAPI, SQLite, Raspberry Pi*
Automatic license plate detection and entry management for residential areas with custom AI-powered plate OCR, achieving <**700ms inference time** on a Raspberry Pi Zero 2 W with enhanced optimizations.

ACHIEVEMENTS AND VOLUNTEERING

- **Gold Medalist,** JuniorSkills India 2021 organized by NSDC (Web Technologies)
- **OSS Contributions**: Astro, core-js, multiple smaller projects
- **Winner**, Echelon '25 Hackathon – P&ID Digitization & Analysis using Artificial Intelligence
- **Technical Head** of Association of Computer Engineering Students (ACES) – 2024/25
- **Technical Lead** of GDG ViMEET (Google Developers Group) – 2024/25

SKILLS

- **Backend & API Development**: Node.js, Next.js, Python, FastAPI, RESTful APIs, Go
- **Databases**: MongoDB (NoSQL), PostgreSQL, MySQL SQLite (SQL)
- **Cloud & DevOps**: AWS (EC2, S3, Beanstalk), Docker, Git, GitHub Actions, Jest, Vitest, Terraform
- **Frontend & Other**: TypeScript, JavaScript, React, Svelte, HTML, CSS
- **AI/ML**: TensorFlow, YOLO, OpenCV
- **Operating Systems:** Windows, Linux, BSD
- **Other Concepts**: BDD/TDD architecture, Agile (Scrum)