

PRADHYUMNA BAIT

AI/ML Engineer | Software Developer | Backend & AI Systems

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SUMMARY

Computer Science Engineering student focused on AI/ML, backend engineering, and scalable software systems, with hands-on experience building production-oriented applications across healthcare, financial infrastructure, and digital forensics. Skilled in Python, C++, JavaScript, FastAPI, React, REST APIs, databases, data analytics, and AI/ML integration. Experienced in designing end-to-end systems involving asynchronous processing, microservices, real-time data pipelines, AI inference, and secure data workflows. Strong interest in building reliable, real-world AI products that combine intelligent automation with scalable software architecture.

SKILLS

Languages:	Python, C++, C, Java, JavaScript
Frameworks & Libraries:	FastAPI, Flask, Node.js, Express.js, React.js, React Native
Databases:	MySQL, MongoDB, SQLite, Firebase
Data Analytics:	Pandas, NumPy, Matplotlib, Seaborn, Excel, Power BI
Developer Tools:	Git, GitHub, Docker, Jupyter Notebook
Core Concepts:	Data Structures & Algorithms, OOP, DBMS, Operating Systems, Computer Networks, Software Engineering

PROJECTS

MOKSHA — Real-Time Capital Market Settlement Infrastructure Python | Hyperledger Fabric | UPI Block | RBI e₹-W | HTLC

- Architected a T+0 capital-market settlement infrastructure for Indian equity markets enabling atomic Delivery-versus-Payment (DvP) across tokenized securities and regulated payment rails.
- Designed HTLC-based cross-ledger orchestration with automatic atomic rollback to reduce counterparty and principal settlement risk.
- Targeted a 99.65%+ reduction in settlement time, transforming conventional 24–48 hour settlement cycles to under 5 minutes.
- Integrated PAN/UCC-based identity, private data collections, deterministic finality, and regulatory auditor nodes for privacy-preserving and compliance-oriented transaction processing.
- Designed horizontally scalable Hyperledger Fabric channels targeting 3,500–5,000 TPS per channel for institutional-grade throughput.
- Engineered the architecture to enable real-time capital release by minimizing liquidity locked during traditional settlement cycles.

MEDDESK — AI-Powered Clinic Management & Appointment Platform Python | FastAPI | React | AI/ML | Firebase | REST APIs

- Engineered an end-to-end digital clinic management platform for appointment scheduling, queue management, and clinical workflows.
- Implemented OTP-based appointment booking with a sub-2-minute booking workflow and automated SMS/WhatsApp reminders.
- Developed real-time queue tracking and AI-assisted wait-time prediction to improve patient flow and operational efficiency.
- Designed an AI-powered consultation workflow for diagnosis prediction and automated digital prescription generation.
- Targeted up to 40% reduction in patient wait times and minimized appointment no-shows through automated reminders.
- Standardized digital medication records to reduce manual errors and ensure consistency in clinical workflows.

TRINETRA — Cross-Modal Deepfake Detection & Digital Evidence Platform Python | FastAPI | PyTorch | Redis | Celery | Docker | C2PA

- Architected an asynchronous deepfake detection API platform for forensic analysis of sophisticated audio-visual media.
- Designed a four-layer forensic pipeline: C2PA provenance verification, independent audio/video analysis, cross-modal phoneme–viseme synchronization, and uploader-claim verification.
- Built a scalable FastAPI–Redis–Celery microservices architecture with containerized PyTorch inference workers for parallel processing.
- Implemented asynchronous job execution and automated webhook delivery for high-throughput media analysis workflows.
- Designed audit-ready evidence generation with privacy-aware metadata persistence without storing sensitive media permanently.
- Applicable across social media moderation, financial KYC, news verification, and digital forensics domains.

EDUCATION

Vidyavardhini College of Engineering & Technology, Mumbai	2025 – 2029
Bachelor of Engineering in Computer Science Engineering / Artificial Intelligence & Machine Learning	University of Mumbai

CERTIFICATIONS

- Data Structures & Algorithms using Python
- Web Development
- C++ Programming
- Python Programming

ACHIEVEMENTS

- Participated in multiple national-level hackathons, technical competitions, and developer events, building AI-powered and software engineering solutions.
- Led backend development and technical implementation for an AI-powered healthcare application, integrating AI capabilities with real-world healthcare workflows.
- Built and presented solutions spanning AI/ML, financial technology, healthcare technology, cybersecurity, and distributed systems.