

VINAY KUMAR YADAV

Technical Product Manager | AI Product Architect | 0-to-1 SaaS Builder | Ph.D.
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PROFESSIONAL SUMMARY

Technical Product Manager and Ph.D. engineer who architects and ships production software solo — owning product logic, system architecture, REST API design, security, and AI-directed engineering end to end. Flagship: ConfirmHai (confirmhai.com), a live student-housing platform on FastAPI (async Python), SQLAlchemy 2.0, and PostgreSQL (Neon), deployed on Render across 37 routes with a ~24-file automated test suite. Strong in technical product management, API and data-model design, security hardening, test automation, and translating ambiguous requirements into defensible, production-grade systems, with 8+ years in EdTech.

CORE SKILLS

Engineering (AI-directed): FastAPI, Async Python, SQLAlchemy 2.0, Pydantic, REST APIs, Webhooks, JWT Auth; C# / .NET 8, Blazor, .NET MAUI, Clean Architecture

Product & Strategy: Product Discovery, Market Pain Analysis, MVP Scoping, PRD Thinking, Product Roadmaps, User Flows & Research, B2B2C SaaS, Monetization Design, Go-to-Market, Agile Execution, Stakeholder Management

Data & Infrastructure: PostgreSQL (Neon), SQLite, SQL, Render, Vercel, Git, Sentry, WhatsApp / Meta Cloud API

Security: JWT Denylist, bcrypt, IDOR / Authorization Guards, Rate Limiting, PII Masking, Security-Audit Remediation

AI & LLM: AI Product Management, Directing AI Coding Tools (AI-assisted engineering), Prompt Engineering, LLM Integration, Agentic & Automation Workflows, Conversational / WhatsApp AI, Anti-“spiral” Feature-Scoping Discipline

FLAGSHIP AI PRODUCTS

ConfirmHai (formerly Elite Key) — AI Product Architect & Technical Lead | PropTech, B2B2C | confirmhai.com

Solo builder — product, architecture, and AI-directed engineering

- Built, security-hardened, automated-tested, and launched a live hyperlocal student-housing platform (confirmhai.com), now in the hands of early real users pre-marketing — on FastAPI (async Python), SQLAlchemy 2.0 async, and PostgreSQL (Neon), deployed on Render across 37 routes.
- Engineered production rigor: ~24 automated pytest suites (auth, authz/IDOR, confidence engine, rate-limiting, security headers) kept green per change; remediated zero-trust security audits — fixed stored XSS, enforced PII masking, IDOR guards, OTP rate limits (5/30 min), money/PII audit logging, and prod fail-fast config.
- Architected the product moat: an Availability Confidence Score engine (ConfidenceEngine + PredictiveEngine) that scores whether a listing is truly vacant from freshness and vacancy signals; an owner's WhatsApp “rent ho gaya” reply drives the score to 0 “Rented.” Verified end-to-end.
- Integrated the WhatsApp / Meta Cloud API with webhook signature verification and OTP onboarding (OTPs bcrypt-hashed, TTL- and attempt-capped).
- Designed a monetized paid-unlock gate with payment_ref idempotency / anti-replay so one payment cannot unlock two contacts; phone numbers masked until paid unlock; roommate-matching and visit/QR-check-in booking flows.
- Instituted an anti-“spiral-error” engineering discipline (a FEATURE_MAP pinning every feature to its exact files, endpoints, and tables) so AI-assisted code changes stay scoped and never break unrelated features.
- Shipped an “Invisible Listing” flow that parses an owner's Hinglish WhatsApp caption into a live property listing, plus an owner-freshness Nudge engine (stale → auto-nudge → owner reply → score refresh loop).

BodhitAI — Product Owner & AI Product Architect | Consumer Wellness (B2C), Mobile

Solo builder — product ownership, architecture, and AI-directed engineering

- Built a privacy-first, offline mental-wellness self-reflection app on C# / .NET 8, Blazor, and .NET MAUI using strict Clean Architecture (one-directional Presentation / Infrastructure → Application → Domain) with cloud-swappable storage contracts.
- Built a fully deterministic Pattern engine (PatternService + IntelligenceCore: Contradiction, Drift, Stability, Volatility, Load) with no randomness and no fake AI, producing honest weekly insight.
- Shipped the hero “Pulse Check” — a five-dimension daily state check producing a deterministic state, dominant stressor, and interpretation — plus a persona-based 5D Life Audit and three behavioural scans.
- Exercised product integrity as owner: audited the app and feature-flagged OFF every not-yet-honest feature (a fake “AI mirror,” a rules engine posing as AI, an insecure payment flow), cutting an 8-feature surface to 3 that genuinely work; kept LLM integration scaffolded but disabled until functional.

PROFESSIONAL EXPERIENCE

Chegg India Pvt Ltd — Subject Matter Expert, EdTech & Digital Learning

Apr 2017 – Mid 2025 | Remote

- Worked across CMS/LMS ecosystems (Moodle, Canvas) supporting digital-learning workflows at large EdTech scale.
- Improved content-delivery and learning-quality workflows by translating complex engineering concepts into accessible learning formats.
- Applied assessment design, user testing, and gamification thinking to improve learner engagement and platform usability.
- Mentored junior contributors on educational-technology quality, technical problem-solving, and content-review discipline.

EDUCATION

Ph.D., Mechanical Engineering — NIT Kurukshetra, 2023 | CGPA 9.5/10 (Multi-objective Optimization, Genetic Algorithms, Parametric Study)

M.Tech, CAD/CAM — SVNIT Surat, 2016 | CGPA 8.65/10

B.Tech, Mechanical Engineering — VIET, Greater Noida, 2014

ACHIEVEMENTS & RESEARCH

- Published peer-reviewed research on multi-objective optimization using genetic algorithms and IoT implementation in e-learning platforms.
- Qualified GATE in 2014, 2016, and 2017.
- Built, tested, and deployed two production AI SaaS products solo (PropTech and consumer wellness) by directing AI engineering tools.