

Tanmoy Bhattacharjee

Senior Engineering Manager · Engineering Leadership & Strategy · Product Engineering for AI-Native Consumer Products · Agentic AI: MCP, RAG, LLM Evaluation

Singapore (Open to relocate) | engg.tanmoy@gmail.com | +65 8909 6344 | linkedin.com/in/tanmoy-linkdin | tanmoy-git.github.io/resume

SUMMARY

Engineering leader and hands-on AI builder with 13+ years in software and 6+ years managing engineering teams. At PropertyGuru I lead about 14 people across 3 teams (15+ hires, attrition under 5%) and build AI-native consumer products: real-time AI lead management (85% adoption) and AI-native listing creation (62% adoption), plus an AI-native engineering workflow with a custom MCP server that made bug fixes about 30% faster.

IMPACT

- **15+ hires** across 3 teams built from scratch, with 6 promotions and attrition under 5%
- **About 30%** faster bug fixes and 15 to 20% faster delivery with a custom MCP server and AI tooling
- **2 to 3 deploys per week** up from once every 2 weeks; about 85% of legacy PHP retired
- **85% adoption** and 93% repeat customer rate (RCR) for AI lead management
- **+7.6% leads** and about USD 38K per month saved from the enquiry revamp
- **62% adoption** and 84% RCR for AI-native listing creation

EXPERIENCE

PropertyGuru — Senior Engineering Manager, APAC

Feb 2019 - Present

Promoted four times in under six years: Software Engineer (Feb 2019), Senior Software Engineer (Aug 2020), Tech Lead of 2 teams and about 10 people (Nov 2020), Engineering Manager (Apr 2022), Senior Engineering Manager, APAC (Sep 2024). Reports to the Head of Engineering. Markets: Singapore, Malaysia, Thailand, Vietnam and iProperty Malaysia.

ENGINEERING LEADERSHIP

- Lead **3 teams, about 14 people** (peak about 21) across Singapore, India and Malaysia, plus vendors in Vietnam and Europe. **Built 3 teams from scratch and hired 15+ engineers; 6 internal promotions** to Tech Lead or Lead Engineer, 1 Engineering Manager developed and promoted, attrition **under 5%**.
- Org design: two lean teams report directly (Home Owner Solutions, Idea to Market) plus one team led by an Engineering Manager (Consumer Conversion & Engagement, 6 members); merged teams twice and split one. Partner with product, design and data/analytics.
- Set yearly vision and quarterly strategy via 6-week OKR (objectives and key results) cycles; own budgets (salaries, AI tooling, mapping, contractors); led build-vs-buy for the consumer data platform.
- AI advisory board member: set company AI direction, governance, budget, tooling and guardrails for sensitive data; helped adapt hiring for AI changes.

AGENTIC AI & LLM SYSTEMS (HANDS-ON)

- Built and rolled out a **custom PropertyGuru MCP (Model Context Protocol) server** alongside GitHub Copilot, Claude and OpenCode: **about 30% faster bug fixes** and **15 to 20% faster feature delivery** across engineering.
- Created a **custom AI harness from scratch** for PropertyGuru use cases: it aggregates and analyzes logs, runs tokenized search, connects the dots across systems and works out a **system-wide root cause**.
- Developed the intelligent search system on **LangChain** with **fine-tuned models** (AI search experiments improved conversion rate per user) and fine-tuned the image moderation engine on property images, so **about 85% of listing moderation** is now handled by AI.
- Run **LLMOps** end to end: a custom LLM quality evaluation pipeline (Jev with Claude Opus 5.5 as judge) that scores single responses and whole conversations and runs sentiment analysis; **LLM observability** with LangSmith and Datadog; model deployment on **AWS Bedrock** and a **self-hosted NVIDIA server**.
- Run production LLMs with **prompt engineering, RAG, vector databases, MCP and guardrails**; control LLM cost with cost-aware model routing using Jev.
- Launched real-time AI lead management (AI grouping and alerting): **85% adoption, 93% repeat customer rate (RCR)**.
- Delivered **AI-native listing creation**: AI-written descriptions, image moderation, tagging and enhancement, and auto-generated video with voiceover; **62% adoption, 84% RCR**.
- Shipped AI agent moderation and verification (72% accuracy), real-time listing alerts (76% adoption, 90% RCR), and an AI home valuation and agent recommendation system, a big bet planned for monetization.

PLATFORM & DELIVERY

- Own listing search, the home page and listing details pages for **about 7 million monthly active users** and **about 16 million searches per month**: OpenSearch with hot-warm caching on Redis, real-time sync over RabbitMQ and Kafka, and a search API at **66 ms at P95**.
- Designed **multi-tenant systems for 6 brands in 4 countries** (no per-brand releases) and central REST microservices (preferences, communication) with multiple gateway support; a React UI kit on Next.js raised deploys from once every 2 weeks to **2 to 3 times per week**, and about 85% of legacy PHP is retired, with the rest planned within two quarters.

- Engineering excellence: TDD (test-driven development), trunk-based development and continuous refactoring; A/B testing with Statsig (previously Google Optimize) and targeted testing with Segment and Braze; Datadog, Kibana and Sentry observability; Squadcast on-call and incident response; GitHub Actions and Jenkins CI/CD under SOC 2 and PDPA; cut AWS cost by right-sizing Kubernetes pods.

PRODUCT & GROWTH OUTCOMES

- Revamped the enquiry (lead submission) journey and architected the end-to-end WhatsApp lead flow with PropertyGuru as the intermediary: **+7.6% lead volume and about USD 38K per month saved** by partially moving away from WhatsApp for Business. Took Home Owner Solutions from 0 to 1.
- **IPO:** Listing Performance Insights for agents (about 4% subscription uplift, 1.4x adoption month over month); Bahasa Melayu support for Malaysia (about 7% organic traffic growth); SEO work that outpaced competitors and grew market share.
- **Consumer:** new search (+2.8% click-through rate, +1.7% conversion), relevant results (+4% conversion week over week), GraphQL consumer profiling (+2% retention week over week), Agent Ratings & Reviews (+4% acquisition), Google One Tap (+7% logged-in users week over week).
- **Agents:** modernized web and app UI (+7% engagement month over month); scaled teams through Agent Monetization hypergrowth as Engineering Manager. Integrated Segment, Google Analytics, Facebook Pixel, DataXu, Yahoo pixel and Braze for recommendations and lifecycle marketing.

Philips — Tech Lead, Full Stack

Apr 2016 - Jan 2019

- Built the team from scratch (2 external hires, 3 vendor engineers, 1 internal hire) and led this **6-person distributed team**.
- Delivered Hospital to Home APIs (patient, care-provider and physician) for preventive care at home across India, Germany and North America: **about 80,000 patients, 100+ hospitals and 99.9% uptime**, reducing hospital admissions and freeing up hospital beds.
- Developed the population-health data aggregation platform for value-based care, a superset of Hospital to Home covering **about 400,000 patients** (launched Dec 2018).
- Delivered the German translation for the WellCentive launch in Rostock (medical insurance management), which went live.
- Filed a patent application (IP ID 82187): AI-Enabled Personal Healthcare Companion, an end-to-end solution.

HomeLane — Senior Backend Developer

Feb 2015 - Mar 2016

- Engineered the pricing engine, which accurately prices furniture by running complex calculations on its 3D model and materials.
- Developed token-based authentication with Google and Facebook OAuth2, raising social logins by **7%**.
- Delivered search, list and product-detail APIs with sort, range and size filters, with search and filtering **under 100 ms**.
- Developed project aggregation APIs and pre-signed URL APIs for secure upload and download on AWS.

eBay / PayPal (eBay Inc.) — Backend Developer, Platforms

Jun 2013 - Feb 2015

- Created batch as a service, replacing per-use-case batch jobs with one shared service that uses otherwise idle compute in off-peak hours; also built a batch service loading raw data into MySQL.
- Managed application-level ESB (enterprise service bus) routing for **all eBay transactions**.
- Published platform functionality as Java libraries used by **all eBay and PayPal teams**.

SKILLS

Leadership: hiring, coaching, org design, OKRs, budgets, performance and compensation management, vendor management, build vs buy, distributed teams

AI: Agentic AI, prompt engineering, custom AI harness, MCP (Model Context Protocol), LangChain, LLM fine-tuning, RAG (retrieval-augmented generation), vector databases, LLM evaluation (LLM-as-judge, conversation scoring, sentiment analysis), LLM observability (LangSmith, Datadog), MLOps and model deployment (AWS Bedrock, self-hosted NVIDIA server), guardrails and AI governance, LLM cost optimization and model routing, AI-assisted SDLC, Claude, OpenAI, Gemini

Engineering: TypeScript, Node.js, NestJS, React, Next.js, Python, Java, REST/GraphQL, OAuth2 and token auth, microservices, API gateways, multi-tenant architecture, developer experience (DORA, SPACE), AWS, GCP, Kubernetes, Docker, CI/CD (GitHub Actions, Jenkins), Datadog, Kibana, Sentry, Squadcast, OpenSearch, Redis, RabbitMQ, Kafka, SOC 2 and PDPA

Product & growth: A/B testing (Statsig), Segment, Braze, Google Analytics, lifecycle marketing, SEO, WhatsApp for Business

EDUCATION & CREDENTIALS

B.E. Computer Science & Engineering, PSG College of Technology (Anna University), 2013, CGPA 8.95 | **Languages:** English, Bengali, Hindi

Certifications: DeepLearning.AI (7 courses); Google AI (10 badges); Microservices Software Architecture: Patterns and Techniques; Leadership Skills Training: Become an Inspiring Leader!; Leadership: Practical Leadership Skills

Publication: IEEE, "A Cost Effective Solution for Control of a Mobile Embedded System Using GPRS"

(ISBN 978-1-4673-1850-1) | **Open source:** swagger-ui-express-updated (npm); OAuth2-Facebook fix in SocialAuth plugin; Virtualenvwrapper correction (OpenCV prerequisite)