

Sangmin Lee

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Senior Software Engineer · Product Engineer · Applied AI

SUMMARY

Senior product engineer with **17+ years across software engineering and technology delivery**, including **10+ years in senior hands-on production roles**. Builds full-stack TypeScript products, shared platforms, and production AI systems from ambiguous requirements through launch. Led architecture and modernization across federal R&D and enterprise platforms, delivered production software directly with client stakeholders, and set standards adopted across teams. Creator of **OpenSquid**, open-source AI-agent infrastructure, and solo builder of four AI products from zero to one.

CORE SKILLS

Full-Stack & Integration: TypeScript, JavaScript, React, Next.js, Node.js, Angular, Python (working proficiency), REST, GraphQL, web components, PostgreSQL, Supabase, MongoDB, pgvector.

Applied AI & Developer Platforms: OpenAI / Anthropic, MCP, AI agents, RAG, hybrid retrieval and ranking, function/tool calling, structured outputs, evals, human-in-the-loop workflows, npm platform development.

Reliability, Quality & Infrastructure: finite-state-machine orchestration, durable state, deterministic verification gates, unit/integration/E2E testing, CI/CD, Docker, AWS, Vercel, Datadog, Sentry.

Staff-Level Leadership & Delivery: system and API design, technical strategy, requirements refinement, reusable platform architecture, documentation, stakeholder communication, coding standards, mentoring, and cross-team adoption.

EXPERIENCE

Founder & AI Product Engineer, Independent

2025 – Present

Owned four AI products from ambiguous idea through production, solo, across architecture, services, data, UI, deployment, analytics, reliability, and iteration.

OpenSquid, open-source (MIT) AI-agent and developer platform:

- Architected a TypeScript/Node.js platform spanning an npm package, CLI, MCP servers, hook runtime, portable behavior packs, and coding-agent integrations.
- Built hybrid retrieval, deterministic quality gates, durable state, persistent context, and restart-safe handoffs for long-running workflows.
- Created reusable evaluation infrastructure combining specification traceability, deterministic validators, proof-test coverage, model audits, and human acceptance.
- Built CI/CD and published architecture and change-impact documentation at github.com/smlee/opensquid.

RankLabs: Built AI-search monitoring across controlled LLM querying, crawlers, analytics, and response-drift detection at **<10 ms p95**, improving AI mention coverage **2 to 4x**.

Mindcraftor: Built AI generation and validation workflows with RAG (pgvector), serving **1,600+ users** with paid conversions. **RecoverPay:** Built full-stack, real-time pre-transaction risk and fraud detection.

Senior Research Scientist, Peraton Labs

Jan 2021 – Jun 2025

- Turned research prototypes into resilient production software for U.S. federal programs with **tens of millions of dollars** in awarded contracts in a security- and compliance-heavy environment.
- Owned technical direction for platform modernization through reusable libraries, modular architecture, lazy loading, and web-worker parallel compute, delivering **~38% faster** high-fidelity visualization.
- Shaped architecture and performance strategy across teams, set standards, resolved cross-layer tradeoffs, and mentored engineers building mission-critical systems.

Full-Stack & Experimentation Engineer (Contract), SAE.SO

Jun 2021 – Present

- Owned technical delivery of an **enterprise client's** agent-facing portal end to end across UI, service APIs, and data during a ~3.5-month engagement. Worked directly with client stakeholders in every project meeting, translating requirements into implementation decisions.
- Built roughly half of the client's atomic component library with Tailwind theming, Storybook documentation, automated tests, and accessibility standards.
- Owned technical implementation and measurement reliability for **500+ A/B and multivariate experiments**; built reliable execution and reusable instrumentation adopted across teams, and partnered with PM and CRO stakeholders.
- Independently upgraded product-page templates and technical SEO for an enterprise e-commerce client. Within two months, organic traffic rose **17%** and tracked LLM visibility improved **43%**.

Senior Full-Stack Engineer, Verdocs

Dec 2016 – Jan 2021

- Owned architecture and adoption of a reusable e-signature platform, extracting flows into standalone, versioned libraries consumed by multiple applications.
- Built framework-agnostic Web Components with stable APIs and established modular conventions supporting incremental adoption.
- Reduced duplicate implementation and mentored engineers on maintainable platform architecture.

Lead Front-End Developer, Complex Networks

Sep 2015 – Dec 2016

- Independently owned front-end revamps for three sister sites, each serving millions of monthly visitors, before consolidation into a shared platform.
- Partnered with BI, design, CRO, and product teams; defined coding standards and mentored engineers.

Earlier: Co-Founder / IT Consultant, Computer Pathways (2008–2015). Owned direct small-business client delivery from system and MVP scoping through roadmaps, releases, technical documentation, and training.

EDUCATION

M.S., Computer Science, New York Institute of Technology

B.S., Accounting, New York Institute of Technology