# John Brecht

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**Founder & Principal Engineer, Threepenny Labs · AI products · EdTech and healthtech**

## SUMMARY

Hands-on engineer with 25+ years building products for educators and clinicians, including a decade on a real-time teletherapy platform serving 2,000+ clinicians across 7M+ sessions. Designed the prompts and structured outputs behind production LLM features on AWS Bedrock, built to augment professional judgment rather than replace it. Since 2026, shipping full-stack AI products end to end, including a Claude API pipeline with its own model evaluations. In applied AI for 20+ years, starting at SRI International with a patented natural-language translation method. Former interim VP of Engineering.

## EXPERIENCE

### Threepenny Labs LLC · Oakland, CA · Founder & Principal Engineer

May 2026 – Present

Independent product studio and consultancy. Projects begun in early 2026 and built with an AI-native workflow of coordinated coding agents.

#### Products and AI-native tooling

- **Tapestry, AI knowledge-graph builder (pre-launch):** turns documents and web pages into an explorable graph of people, places and events through a multi-stage Claude API pipeline; its eval harness showed Haiku beating Sonnet on recall at 1/15 the cost.
- **PilotForge, automated usability testing:** built a multi-agent system in which persona-based agents use a live web app and a Researcher agent reports findings by severity; early studies found 3 real bugs in Umami.
- **Tutorial Forge, tutorials as code:** published a source-available library and CLI on npm that turns scripted Playwright walkthroughs into narrated videos, so teams re-render tutorials in CI instead of re-recording them.
- **Umami, community event platform:** designed and built a full-stack event-management app with ticketing, volunteer coordination and community support, and shipped it to real users: beta-tested by 4 organizers and 150 members, with ~10,000 unit and ~950 end-to-end tests.
- Also built Symvene (in development), a bring-your-own-key tool in which a panel of conflicting AI expert personas debates a user's question, grounded in their own documents; and shipped md2pdf.me, a free Markdown-to-PDF tool.

**Client engagement: a remote healthcare provider (August 2026 – Present).** Contract senior engineer preparing a teletherapy platform for launch.

- Led the pre-launch security review and drove launch-blocking authorization fixes into production, each guarded by a regression test, with static build checks over every API route and server action now catching that class of bug automatically.
- Wrote the platform's logging and observability plan (error tracking, audit logging, alerting), designed to keep patient data out of logs and third-party services.
- Built automated testing from nothing: unit and Playwright end-to-end suites gating every pull request in CI, raising test coverage of security-critical code from 0% to 86%.

### Presence · New York, NY (remote) · Engineering Manager & Tech Lead

January 2022 – May 2026

- **Real-time clinical notes (AWS Bedrock):** captured live therapy-session speech with in-browser speech-to-text and designed the prompts that turned the transcript stream into SOAP-format notes in real time.

- **Content classification:** designed prompts that summarized and tagged a PDF activity library, producing both free-form content tags and schema-constrained classifications such as grade level and therapy type.
- **Image moderation and tagging:** designed prompts that classified library images for content discovery and flagged objectionable material.
- **Student privacy:** used TensorFlow and BodyPix to detect student faces in Therapy Room screenshots and blur them automatically.
- **Real-time platform:** directed development of the Therapy Room, partnering with Product, Design, Content and Therapy Operations on the roadmap.
- **Leadership:** served 4 months as interim VP of Engineering after an executive departure; managed 5 senior engineers; founded the Front End Dev Guild, standardizing practices across 20+ engineers.

### Presence · San Francisco, CA · Senior Software Engineer

October 2015 – December 2021

- Tech lead for the Therapy Room: built a real-time collaborative platform integrating video (Vonage/WebRTC), real-time sync (Firebase), and a multimedia library of assessments, activities and games.
- Architected the migration from AngularJS to Angular on a live production platform; built CX, an enterprise tool for school administrators to manage student data and referrals.

### Rosetta Stone · San Francisco, CA · Senior Software Engineer

June 2013 – October 2015

### SRI International, Center for Technology in Learning · Menlo Park, CA · Learning Technology Engineer

July 1999 – June 2013

Built research systems with learning scientists and computational linguists, often translating between research goals and engineering.

- **Speech and language AI:** co-led an assessment tool built on SRI STAR Lab automatic speech recognition, working with computational linguists to evaluate students' spoken responses, an early application of AI to educational assessment. Co-invented, with an SRI NLP researcher, a method for translating pharmacists' medication instructions into plain-language text or speech in the patient's own language (US Patent 7,716,037).
- **Lead Architect, Learning Registry (US Dept. of Education / Dept. of Defense):** architected a national-scale, federated registry with Python services and replicated CouchDB stores indexing hundreds of thousands of resources, with no single point of failure.
- **Collaborative learning:** led teams building interactive web textbooks and real-time collaborative workspaces, including Java coordination services for synchronized multi-user activity.

## SKILLS

- **AI / LLM:** Claude API, AWS Bedrock, structured output, model evaluation, cost controls, RAG, multi-agent systems, speech-to-text, computer vision (TensorFlow, Google Vision); Claude Code for agentic development
- **Languages and frameworks:** TypeScript, Python, Java; Node.js/Next.js, React, Angular (v2–v20), RxJS
- **Data and infrastructure:** PostgreSQL/Supabase, Prisma, Firebase, MySQL, CouchDB; WebRTC, Vonage, LiveKit; Vercel, Docker, CI
- **Testing and security:** Playwright, Vitest, Jest, Cypress; authorization review, audit logging, JWT, SSO

## EDUCATION, PATENTS AND PUBLICATIONS

- M.S. Physics, 1999, and B.S. Astrophysics, 1997, Michigan State University (N-body simulation of galactic dynamics)
- 3 US patents: 7,716,037 (natural-language translation in a finite domain, 2010), 8,230,351 (real-time collaborative workspaces, 2012), 8,656,044 (networked object sharing, 2014) · LAK 2012 (Learning Registry) · PADI assessment design (AERA 2006; SRI Technical Report 21, 2009)