



[00_INDEX] · INDEPENDENT PRACTICE

LYLE UNDERWOOD.

LLM INTEGRATION · AGENT HARNESS · CONTEXT ENGINEERING · FORWARD-DEPLOYED

Senior software engineer specializing in the production-reliability layer of AI features. Harness engineering, retry/repair loops, context engineering. Reliability instincts from 11 years on a B2B commerce platform at \$21B annual GMV. Recent agentic-harness depth from a product-development lead role on a DAM/PLM rebuild.

CONTACT

lyleunderwood@gmail.com
lyleunderwood.com

MADRID · US CITIZEN
REMOTE FOR US

■ AVAILABLE

[01_EXPERIENCE]

EXPERIENCE

ShowLabs · Software Lead

OCT 2023 / PRESENT · REMOTE

Joined as Lead Frontend Engineer; took over the software lead after prior technical leadership failed to execute. Rebuilt most of a DAM/PLM-style platform for apparel, footwear, and accessories.

- Built a **surface-aware multi-agent copilot** with persisted conversations, agent routing, handoffs, surface-aware context, and tool-driven actions across product surfaces.
- Designed a **treatment workflow** that branches a shared conversational context across entire product batches instead of cold-starting every time. Significantly improved visual consistency where one-shot generation falls apart.
- Built **AI-augmented variant generation** with confidence scoring, post-processing, and approval flows.
- Built an autonomous **brand-discovery pipeline**: parallel-worker pool, lock coordination, Gemini-driven extraction with strict validation and retry, taxonomy-mapping repair loops. Captured **7,500+** retail brands of structured research.
- Built core DAM/PLM surfaces, auth, organization model, org-to-org sharing, and retailer-network functionality from the ground up.

Emerald Holding Inc. (NYSE: EEX) · Director of

JAN 2021 / JAN 2023 · REMOTE

Product Development

- PlumRiver acquired by Emerald Holding Inc. on **Jan 6, 2021 for ~\$34M**. Stayed through the post-acquisition integration of the Elastic Suite platform.
- Led product development through scale-up: customer footprint growth, platform evolution, hiring, architecture decisions.

PlumRiver LLC · Engineering Lead

EARLY 2016 / DEC 2020 · REMOTE

- Built advanced **digital merchandising workflows**: HTML/CSS catalog templating, automated headless-Chromium PDF pipeline, and a whiteboard-style infinite-canvas selling tool with React-based rendering.
- Built a **modular client-extension architecture** on a shared toolbox. Supported deep brand-specific customization without collapsing maintainability.
- Led an incremental **Dojo → React migration** across a live commerce codebase taking actual orders. No platform downtime, no feature freeze.
- Built **real-time inventory** with ERP sync, regional warehouses, multiple shipments, and date-based availability across **30+** currencies and **18** languages.
- **Built the engineering team from the ground up**. Wrote job descriptions, interviewed, made hiring decisions as the platform scaled.

Elastic Suite Inc. · Engineering Lead

2012 / EARLY 2016 · REMOTE

Third employee. Built the core software platform behind a B2B wholesale commerce business. The same platform later acquired into PlumRiver, then Emerald, publicly associated with \$21B annual GMV.

- Engineered **core order-authoring and processing systems** for a multi-tenant commerce platform serving hundreds of brands and hundreds of thousands of retailers.
- Built **ETL pipelines** across heterogeneous legacy ERP systems on the input side, and **EDI 850 + SAP** order-output flows on the downstream side.
- Designed **rules-engine discount and sales-program systems** for complex brand-specific commerce requirements.
- Periods as the only engineer on the platform. Full-stack ownership across ordering, integrations, inventory, and merchandising.

[02_FOCUS]

CORE COMPETENCIES

Harness engineering

production AI: context, tools, gates, feedback

Agentic systems

multi-agent orchestration, autonomous research

Full-stack product eng

ordering, ERP/EDI, real-time inventory, search

Non-obvious B2B UX

canvas, browser PDF, consumer-grade in B2B

Technical leadership

architecture, hiring, product judgment

[03_PROOF]

SELECTED OUTCOMES

\$47M

ACQUISITION

\$21B

ANNUAL_GMV

350+

AFA_BRANDS

250K

RETAIL_USERS

\$100K

PRINT_STANLEY

103%

KPI_FOOTWEAR

27%

ADOPT_YOY

[04_KEYWORDS] · FOR THE BOTS

KEYWORDS

TypeScript, React, Next.js, AWS, Amplify, Lambda, Aurora, CloudFormation, OpenSearch, Elasticsearch, MongoDB, SQL, Anthropic, OpenAI, Gemini, Claude, LLM, RAG, prompt caching, multi-model routing, AI gateway, fallback, multi-agent orchestration, agentic workflows, treatment workflows, retry/repair loops, validator pipelines, human-in-the-loop, approval gates, eval gates, observability, rate-limit, backoff retrofitting, context engineering, harness engineering, ETL, ERP, EDI 850, SAP, rules engines, real-time inventory, search, headless Chromium, browser canvas, PDF generation, B2B commerce, wholesale, DAM, PLM

Currently available for senior contract or full-time work through my own practice. Best fit: companies hitting the production-reliability layer of an AI feature. Integration tax, agent sprawl, capacity ceiling, hallucination propagation. The harness around the model matters as much as the model itself.

V . 2 0 2 6 . 0 4 . 2 7