



autodidact creative lead systems engineer applied researcher

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professional summary

autodidactic engineer and creative lead with 6+ years of engineering complete systems, building software, conducting independent applied research, and creating brands. work spans systems architecture, full-stack development, embedded engineering, industrial automation, computational graphics, process engineering, and visual design.

technical depth and creative execution are inseparable in my work. i study the underlying process, build the software or hardware, design the interface, establish the visual identity, and work through delivery or the business model. my skills are diverse because the problems i pursue are multidimensional.

don't think in job titles.
think in systems.

i understand that i don't understand. then i study, build, measure, and iterate until i do.

technical disciplines

software engineering

typescript javascript python rust c / c++ java sql html / css

full-stack development

react node.js electron rest apis sqlite web applications responsive ui deployment

systems architecture

ipc concurrency agent systems tool protocols runtime design persistence profiling reverse engineering

computational graphics

svg pdf pptx vector geometry rendering animation dom / cssom adobe illustrator sdk

embedded engineering

esp32 arduino raspberry pi sensor integration rs-485 iot pid control

applied science

crystallization lyophilization thermodynamics vacuum physics heat transfer process control instrumentation

design & production

creative direction branding packaging dielines print production ui/ux design systems typography

research & tooling

applied research experimental design benchmarking documentation git adobe creative suite technical writing

professional experience

founder · creative lead · systems engineer

thedabcorner llc · independent practice · st. louis, missouri

sep 2021 – present

- delivered 112+ complete projects across software, identity systems, packaging, manufacturing artwork, automation, and digital products, owning the path from initial concept to production.
- engineered full-stack applications, brand websites, dashboards, service integrations, and deployment infrastructure while independently directing their ui and visual identity.
- designed print-ready consumer packaging systems including production dielines, geometry, material constraints, specialty finishes, and repeatable design-to-manufacturing workflows.

selected capabilities full-stack engineering systems design branding packaging engineering production creative direction

founder · full-stack developer

presgen · remote

feb 2026 – present

- founded and architect a visual authoring platform spanning the editor, vector geometry, animation, document rendering, and export pipelines.
- own frontend and backend architecture, performance investigation, the component system, product interface, and technical creative direction.

selected capabilities react typescript rendering graphics product design

full-stack engineer · community administrator

engineering minds · remote

jan 2025 – present

- engineered a full-stack web experience for stem collaboration, resource sharing, and technical education.
- created explanatory scientific graphics and technical resources translating mathematical and engineering concepts into accessible experiences.

selected capabilities web engineering stem education technical communication ui/ux

process engineering lead

may 2022 – 2024

carboxyl manufacturing · earth city, missouri

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built crystallization monitoring and thermal-control systems using raspberry pi, esp32, sensors, telemetry, alerts, and web-based operator interfaces.

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reverse-engineered freeze-dryer behavior and developed batch-control improvements; prior process documentation reported an approximately 44% cycle-time reduction, from 8 to 4.5 hours.

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developed python tools for gravimetric and vapor-pressure analysis and adapted hvac controls for cold-room process requirements.

selected capabilities

process control

scientific computing

embedded systems

thermodynamics

instrumentation

selected engineering & independent research

openfork / oxp

desktop-first agent and developer systems spanning runtime tooling, interprocess communication, durable sessions, concurrency, permissions, automation, and multi-agent orchestration.

systems architecture

ai tooling

desktop software

presgen

founded a creative engineering platform combining vector editing, animation, scientific visualization, mathematics, chemistry, and svg/pdf/pptx document workflows.

creative lead

full-stack

computational graphics

arcfit / illustrator runtime tools

deterministic packaging artwork geometry and a family of native-bridged extendscript tools spanning serialization, binary transport, and scripting interoperability.

packaging geometry

reverse engineering

webseal

browser software integrity research involving authenticated releases, cross-runtime verification, scoped capabilities, and evidence-grounded threat models.

browser security

runtime engineering

nacre / silica / phasor

raster-to-vector reconstruction, browser rendering, semantic document export, and web animation compilation, with measured performance and fidelity tradeoffs.

graphics research

svg

rendering

anvil / cidartha / applied research

compression and low-level data-structure research; independent investigations into crystallization, lyophilization, vacuum physics, and process optimization.

scientific methods

benchmarking

vectoripc

native interprocess communication between illustrator, scripting hosts, and isolated helpers; transport and c++ ownership boundary engineering.

native c / c++

ipc

adobe sdk

thelabjournal

independent research manuscripts translating crystallization, thermodynamics, lyophilization, and experimental evidence into practical engineering knowledge.

independent applied research

technical writing

education & development

self-directed engineering & research

ongoing · source code, primary literature, experimentation, reverse engineering, design and production systems.

st. mary's high school

high school diploma · 2021 · st. louis, missouri.

dual-enrollment coursework

saint louis university and st. louis community college · 2019–2021.

additional information

work authorization

u.s. citizen · authorized to work for any employer.

languages

english · native; spanish · beginner.

research & technical writing

independent applied research and publications at thelabjournal.

understand the mechanism. build the system. measure what matters.

portfolio · archive · source