

Chris Van Emmerik

Senior Full Stack Engineer

📍 **Location** Longmont, CO • Lead, SD

✉ **Email** chris@greenlinkservices.com

📞 **Phone** 720-818-0350

I build complete products — information architecture, backend, UI, and the unglamorous details in between. Backed by a B.S. in Computer Engineering. I build AI-forward and lean on AI-assisted tooling across my workflow, and I care about speed, craft, and software that feels obvious to use.

EXPERIENCE

Owner & Full Stack Software Engineer · [Independent](#) · [Contract](#)

2017 — Present

Greenlink Services LLC · Development and Consultancy · Longmont, CO • Lead, SD

ReceiptKit — Cloud-to-Thermal Printing Platform

2025 — Present

Co-founder and sole engineer of receiptkit.io, a commercial SaaS product — “receipt printing in 3 lines of code.” Design a receipt in a visual editor, then print to physical thermal printers from any web or cloud app via a simple JSON API. I architected and built the entire solution.

- The problem: browsers and cloud servers can't reach thermal printers, which speak proprietary binary protocols over raw TCP/USB on the local network — and Star's own cloud paths (CloudPRNT polling, MQTT) can't print image receipts fast enough. Built the missing edge “bridge” that caches templates, renders locally, and pushes print data straight to the printer over USB/Ethernet — ~40ms locally, ~97ms over the cloud.
- Designed a “pseudo-SVG” template format for speed: an SVG template plus dynamic JSON transforms to an SVG image, then to printer binary. Both hops are extremely fast — the quickest render path I found for image-based receipts, not just text.
- Cut render latency ~50x (600ms to 12ms) with a custom ttf-parser text-to-path pre-processor that eliminates the rasterizer's system-font resolution — verified byte-identical output before shipping.
- Real-time status, presence, and job dispatch over AWS IoT MQTT — chosen as a lightweight pub/sub transport that scales to large device fleets cost-effectively; per-org-scoped policies, plus deliberate offline-first failover to a LAN HTTP bridge so the register keeps printing when the internet drops.
- Built the visual editor — a drag-and-drop SVG template designer with dynamic, data-bound elements and fields that render live against real order data.
- Three AI authoring paths with Claude: generate a template from a text prompt, refine an existing one through incremental AI edits, or photograph a paper receipt and get an editable template back via vision — all SSE-streamed.

Family Hardware — E-commerce Platform

2020 — Present

Designed, built, and maintain the full online storefront for a two-location Florida retailer with 150,000+ SKUs.

- Full commerce stack: Stripe + PayPal checkout, subscriptions, dynamic tax, multi-warehouse ShipEngine/FedEx live rating, in-store pickup, returns with prepaid labels.
- Faceted catalog search across 150,000+ SKUs with Algolia InstantSearch, surfacing live per-store inventory and pricing from MySQL.
- Static generation at scale — pre-generated category/product pages, virtualized product grids, AVIF/WebP image pipeline.
- Customer accounts, order history and tracking, and authentication.

Family Hardware — POS & Business Management Platform

2020 — Present

The internal operating system for the whole business: point of sale, accounts receivable, inventory, purchasing, fulfillment, and reporting across two stores plus online.

- Built the point-of-sale register — the highest-stakes screen in the business: a live cart driven by a scan-to-add SKU input, with fast item find.
- Cart engine handling line-item discounts, price adjustments, and return processing, with checkout for cash, credit-card, and on-account invoice tenders — all reconciled through Stripe and the owner's backend databases.
- Designed the discount engine from scratch: stacking rules, item- and order-level promotions, and the edge cases that have to stay correct to the cent.
- Full refund workflows across credit card and cash, including partial returns and split tenders, with per-line-item tracking that caps refundable quantities and prevents over-refunding before anything reaches Stripe.
- In-person payments via Stripe Terminal, receipt printing over Star CloudPRNT plus a custom local print bridge, and real-time register/device messaging over AWS IoT MQTT.
- Accounts receivable, end to end: on-account invoicing, customer credits from returns and overpayments, automated monthly finance charges, an accounts-aging dashboard, and statements sent by email or physical mail — with AI-drafted collection emails.
- Deep back-office breadth: product and inventory management with duplicate guards and inventory-health advisories, Algolia search, multi-carrier fulfillment via ShipEngine across pickup, delivery, and online orders, purchase orders and suppliers, plus warranty and mail-in tool-sharpening workflows.

MIND — mindapps.org

2019 — Present

App-evaluation platform for the Division of Digital Psychiatry at Beth Israel Deaconess Medical Center, a Harvard Medical School teaching hospital.

- Created and maintain the public React platform behind MIND (M-Health Index & Navigation Database).
- 600+ mental-health apps evaluated against 105 objective criteria from the American Psychiatric Association's evaluation framework.
- Built the data pipeline: scrapes app metadata from the Apple App Store and Google Play, merges it with human rater reviews, and runs it through an approval workflow that governs how ratings are published and kept current.
- Used by clinicians and patients worldwide to find safe, effective mental-health apps.

Manager, Software Engineering · Full-time

2004 — 2017

Gaming Laboratories International · Wheat Ridge, CO

Verify+ (formerly GLI Verify)

2006 — 2017

Software-authentication tool that became the most widely used verification product in the casino industry — safeguarding the integrity of a multi-billion-dollar global gaming market.

- Developed the product from the ground up in managed C#, C++, and unmanaged C++.
- Implemented an Ext2/Ext3 file-system driver enabling Windows to read and hash Linux files and directories on Linux partitions.
- Device-level signature methods for partitions, MBR, CD/DVD, and CF cards; worked directly with gaming manufacturers on proprietary hardware signature methodologies.
- Built client-level snapshot replication: logged-in clients pull a local snapshot of their approval database from the central system, so every signature they compute is matched against it automatically — instantly identifying the exact game or software build and its regulatory approval status.
- Led the conversion from freemium tool to subscription service exceeding \$500k annual revenue.

Forensic Analysis

2006 — 2017

Primary forensic investigator for slot-machine malfunction incidents worldwide — the go-to engineer for the hardest cases.

- Extracted and dumped RAM from physical gaming devices, then analyzed memory and source code to pinpoint bugs and points of failure.
- Reproduced reported malfunctions on live hardware, documenting each step of the analysis as it happened.
- Used in-circuit emulation and hardware debuggers to step through live source on physical devices, tracing code paths to hardware behavior.
- Partnered with compliance and engineering management to build out the practice's testing methodology and procedures.

GAT Image Repository

2008 — 2017

On-floor verification of live casino software via unique, on-demand seeded signature calculations.

- Created and established the project; adopted by 6 US regulatory jurisdictions at the time, and now supported by virtually all gaming manufacturers.
- Generated testing revenue exceeding \$1M annually.
- Designed the database structures, Windows calculation services, and integrations with GLI's product line.

Iris Online (formerly GLiCloud)

2012 — 2017

Inventory-tracking and regulatory-compliance platform for casinos and regulators.

- Designed and developed the product from the ground up, then built and led the team that ran it.
- Customer onboarding with automated data import and mismatch-resolution UI, real-time status notifications, dynamic change-request workflows, and a regulated-shipping interface.

Kobetron GI-4000 Plus

2015 — 2017

All-in-one embedded device for verifying gaming software and hardware.

- Co-designed the product; implemented the communication protocol between the embedded device and its tablet front end.
- Integrated Verify+ hashing/verification engines with a C# WPF tablet UI; managed contract hardware and software engineers.

SKILLS

Frontend

React · Next.js · TypeScript · Redux · Material UI · InstantSearch · PWA / offline-first

Real-time & Systems

AWS IoT / MQTT · WebSockets · Offline-first / failover · Tauri (desktop) · Binary protocols · Presence / LWT

Cloud & Infra

Vercel · AWS (S3, IoT Core, DynamoDB, Cognito) · Docker · CI/CD · Cron / background jobs · Observability

Hardware & Low-level

Embedded systems · In-circuit emulation · Receipt printers / scanners · File-system internals · Serial protocols · Raspberry Pi

Backend & Data

Node.js · Rust · C# / .NET · C / C++ · PostgreSQL / Supabase · MySQL · SQL Server · REST APIs · Serverless

AI Engineering

Anthropic API (Claude) · Claude vision / multimodal · SSE streaming · AI-assisted development workflow

Commerce & Integrations

Stripe + Stripe Terminal · PayPal · Algolia · ShipEngine / FedEx · Twilio-class messaging · Webhooks

EDUCATION & TRAINING

B.S. Computer Engineering — University of Wyoming

2000 — 2004

2013 · Graduate of The Complete Leader Program — Makarios Consulting, LLC