Christian Alexander

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SUMMARY

Audio software engineer who builds plugins end to end in C++ and JUCE: DSP, real-time UI, licensing and signed cross-platform releases. Founder of LuvNote LLC, with four licensed VST3/AU plugins, and a full-stack background (Datadog, ASP.NET Core, React Native) that covers the storefront and licensing backend too.

SKILLS

- **Languages:** C++, C#, TypeScript, SQL, Python
- **Audio & DSP:** JUCE 8, VST3/AU, FFT/STFT, linear- and minimum-phase FIR, TPT/SVF and allpass filters, oversampling, ADAA, granular synthesis, SSB frequency shifting, convolution
- **Real-time:** lock-free atomics and triple buffers, SIMD (SSE2/NEON), allocation-free audio threads, CPU and memory benchmarks
- **Build & release:** CMake, Visual Studio 2022, GitHub Actions, pluginval, auval, Apple notarization, code signing, Inno Setup
- **Full-stack:** ASP.NET Core, PostgreSQL, React Native/Expo, Node.js, Docker, Azure

EXPERIENCE

Founder & Audio Software Engineer — LuvNote LLC *09/2024 – Present*

- **SingleGrain:** commercial granular synthesizer on MuseHub, with a 16-voice grain engine, an IIR Hilbert SSB frequency shifter, lock-free wavetable LFOs and a 32-slot modulation matrix.
- **DyHamic:** resonance suppressor and 16-band dynamic EQ using constant-Q detection, linear- and minimum-phase FIR rendering, and a zero-latency mode built from gliding notches and a solved SVF cascade.
- **DisWhoreTion:** multiband distortion with 46 pedal models, 16x oversampling, ADAA, phase-matched crossovers and bit-exact output at any host buffer size, plus 64-route modulation and morphing.
- **Lazor:** 16-unit allpass dispersion rack (up to 512 stages) that matches a reference plugin to a −110 dB null under random automation, with SSE2/NEON stereo processing.
- Built the release pipeline for all four: GitHub Actions builds with pluginval and auval, signed and notarized installers, and HMAC serials issued by an ASP.NET Core purchase backend.
- Also built LuvNote, a React Native and ASP.NET Core music-dating app with 50+ REST APIs and multi-provider payments.

Full-Stack & AI Software Engineer Intern — Teos Technology *02/2025 – 02/2026 · Denver, CO*

- Led the conversion of the company's React web app to React Native, and set up CI/CD for cloud hosting.
- Sole full-stack developer on Third Eye Health, a multi-tenant healthcare platform with a RAG chatbot (ONNX embeddings, HNSW search, GPT-4o).

Contract Mobile Engineer — Clutch Transportation *05/2026 – 06/2026*

- Built a four-role React Native/Expo fleet app with background GPS tracking and an Hours of Service compliance engine.

Web Developer — Datadog *11/2022 – 04/2024 · Denver, CO*

- Built user-facing interfaces and backend services for large-scale distributed systems on Kafka-backed, event-driven architectures.
- Designed and optimized SQL databases, improving data integrity and performance.

MUSIC BACKGROUND

- Producer and performer in Ableton Live and FL Studio, so I design plugins from the user's side of the DAW.
- **Creative Director, Abyssal Cartel (2019–2022):** produced and performed music, visuals, lasers and lighting for live events, and built the group's website and merch store.

EDUCATION

B.S. Computer Science, Minor in Mathematics — University of Colorado Colorado Springs · 3.65 GPA · 05/2022