Luke Nittmann

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EXPERIENCE

AWS Elemental

Software Engineer, AWS MediaConvert (Portland, OR) | January 2018 - June 2019

Optimized video transcoding engine for improved performance
Rewrote Quicktime decoder enhancing metadata parsing accuracy
Developed automated testing framework for validation components
Resolved customer issues through direct support and code changes
Promoted to SDE II and moved teams to Address Intelligence

Tech Stack:

Languages: C++, Python, Ruby

Cloud: AWS, EC2, S3, CloudFront

Media: FFmpeg, H.264/H.265, VP9, AV1

Infrastructure: Docker, Jenkins, Terraform

Performance: SIMD, Threading, GPU Acceleration

Testing: GTest, Pytest, Selenium

Amazon, Inc.

Software Engineer, Address Intelligence (Portland, OR) | June 2019 - December 2021

Architected address management system for delivery route optimization
Improved cross-region performance through stack regionalization
Built self-service permission system automating internal workflows
Maintained high service reliability across multiple regions
Led migration from monolith to microservices architecture

Tech Stack:

Frontend: React Native, TypeScript, Redux, Jest

Cloud: AWS, Lambda, DynamoDB, S3, CloudFormation

Backend: Java, Python, Node.js, Redis

Database: DynamoDB, Aurora PostgreSQL

DevOps: CI/CD, Docker, Terraform, CloudWatch

Architecture: Microservices, Event-driven, Serverless

Stems Labs

Senior Software Engineer (Remote) | November 2022 - Present

Leading development of Stem Studio, a professional iOS audio remixing platform
Architected modular iOS application following MVVM architecture with efficient state management
Implemented extensive SwiftUI interfaces with custom design system and animations
Developed robust testing framework with XCTest and UI testing automation
Integrated CI/CD pipelines using Fastlane for automated builds, testing, and deployments
Implemented mobile security best practices including secure authentication and data encryption
Optimized application performance through memory profiling and performance analysis

Tech Stack:

iOS: Swift, SwiftUI, Combine, Core Data

Architecture: MVVM, Protocol-Oriented Programming, Dependency Injection

Testing: XCTest, UI Testing, TDD

Audio: AVFoundation, CoreAudio, AudioKit, MIDI

CI/CD: Fastlane, GitHub Actions, Ruby

Backend Integration: REST APIs, GraphQL, WebSockets

Titles, Inc.

Senior Software Engineer (Remote) | April 2024 - November 2024

Led iOS development team for cross-platform image generation platform with native iOS client
Designed and implemented modular iOS architecture using The Composable Architecture (TCA)
Built responsive SwiftUI interfaces with comprehensive accessibility support
Integrated CI/CD with Fastlane for automated testing and deployment to TestFlight
Created robust state management system with efficient navigation patterns
Implemented app analytics and monitoring for user behavior tracking and crash reporting

Tech Stack:

iOS: Swift, SwiftUI, The Composable Architecture

State Management: Combine, Swift Concurrency

Networking: URLSession, Alamofire, Async/Await

Testing: XCTest, XCUITest

Build System: Swift Package Manager, Tuist

Security: Keychain, App Transport Security

INDEPENDENT PROJECTS (2023 - PRESENT)

Sine https://sine-labs.com

MIDI-based beatmaking app for iOS

Built native iOS client with comprehensive MIDI engine and modular architecture
Implemented custom SwiftUI interfaces with complex animations and responsive design
Developed offline-first architecture with Core Data persistence and sync mechanism
Created extensive unit and UI testing suite with XCTest and CI integration
Implemented advanced memory management and performance optimization techniques

Tech Stack:

iOS: Swift, SwiftUI, Combine, Core Data

Architecture: MVVM, Clean Architecture

Audio: AVFoundation, AudioKit, CoreAudio, MIDIKit

Testing: XCTest, UI Testing

CI/CD: Fastlane, GitHub Actions

System Integration: App Intents, WidgetKit

Ther https://ther-app.vercel.app/

Cross-platform mental wellness application with iOS native client

Built iOS native version using Swift and SwiftUI with shared business logic
Implemented modular architecture with clean separation of concerns
Created offline-first experience with robust data synchronization
Developed comprehensive automated testing framework
Implemented enterprise-grade security features for sensitive user data

Tech Stack:

iOS: Swift, SwiftUI

Architecture: The Composable Architecture, MVVM

Cross-platform: Tauri (iOS/macOS native support)

State Management: Swift Concurrency, Combine

Persistence: Core Data, CloudKit

Security: Keychain, App Transport Security

Voet https://voet-app.vercel.app/

Football intelligence platform with AI-powered analysis

Architected real-time data aggregation system with multi-source orchestration
Implemented intelligent content analysis with entity recognition using agentic workflows
Built distributed job queue for resilient scheduled data updates
Developed relational schema with rich entity relationships

Tech Stack:

Frontend: Next.js, TypeScript, Tailwind, Framer Motion, Recharts

Backend: Prisma, Redis, Upstash, tRPC

Database: PostgreSQL

AI/ML: Gemini API, Jina, Vector DB, Embeddings

Data Extraction: Cheerio, Puppeteer, Playwright

State/Utilities: SWR, Zustand, MSW, Zod

EDUCATION

University of Michigan, Ann Arbor
BSc in Computer Science and German Studies (2017)

Notable Coursework:

EECS 381: Object-oriented and Advanced Programmed

EECS 484: Database Management Systems

EECS 495: Acessible Software Systems Design

SKILLS

iOS Development

Swift   SwiftUI   UIKit   Combine   Core Data   AVFoundation
Swift Concurrency   Core Animation   XCTest   XCUITest

Architecture & Design Patterns

MVVM   MVC   The Composable Architecture   Dependency Injection
Clean Architecture   Modular App Design

Web

React Next.js SwiftUI TailwindCSS shadcn/ui WebGL   Recharts React Native Redux Motion
React Three Fiber Framer Motion Radix UI react-spring

Backend

Node.js Prisma ORM tRPC WebSockets Firebase Firestore
Cloud Functions NextAuth pydantic C++ FastAPI Java

Database

PostgreSQL pgvector Redis Upstash DynamoDB   Core Data
Aurora PostgreSQL Neon DB Vercel KV Vercel Blob Storage

AI/ML

LLMs OpenAI Gemini Claude OpenRouter Vector Embeddings   Multimodal AI Semantic search Context management   ComfyUI Vercel AI SDK
Multimodal Embeddings VertexAI Jina CoreML PyTorch CLIP   Prompt engineering Agentic systems Stable Diffusion Flux

Cloud & Infrastructure

AWS Lambda S3 EC2 SQS CloudFront GCP Cloud Run   Firebase Railway Distributed systems Edge computing   Microservices Event-driven
Cloud Storage Vertex AI Vercel Edge Runtime Edge Functions   Serverless architecture CloudFormation CloudWatch

CI/CD & DevOps

Fastlane GitHub Actions Bitrise Ruby Bash Scripting
Swift Package Manager Tuist TestFlight App Store Connect API

Tools

Git Vim Docker Tauri Turborepo Monorepo Terraform
Jenkins Liveblocks

Additional Skills

React Native TypeScript Git REST APIs GraphQL WebSockets
Docker Agile/Scrum Jira