



Kurt Gröng

Application Architect | Full-stack Software Engineer | Visualization |
Creative Code | Web3 | ML/AI | Cryptography

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Summary

I'm Kurt Gröng — an Application Architect, Full-Stack Software Engineer, and Visualization Futurist working at the intersection of creative code, DeFi, and emerging Web3 technologies.

I blend systems thinking, design, and data-driven storytelling to build scalable platforms and immersive digital experiences. With decades of hands-on experience and a design background, I bring deep technical expertise across full-stack and native development. I'm framework-agnostic, currently focused on Swift and JavaScript libraries like Vue/Nuxt, React/Next/Remix, geolocation mapping, and real-time visualization.

Specialties

- Custom Web & Mobile App Development (Hybrid/Native)
- Blockchain & Web3 (DApps, Smart Contracts, DeFi)
- AI & Machine Learning (Neural Networks, Deep Learning)
- Security & Penetration Testing (OWASP, Kali Linux)
- Creative Coding & Data Visualization (WebGL, p5, Three.js)

Frontend

- Vue 2/3, Nuxt 2/3, React, Next.js, Remix
- TypeScript, GSAP, Chart.js, Babylon.js, Processing/p5
- Hybrid Apps: Capacitor, Cordova, NativeScript

Native Development

- Swift, Objective-C, C/C++, React Native, Electron

Backend

- PHP, Node.js, Python, Ruby, Bash
- Realtime: Socket.IO
- Frameworks: Laravel, Flask, Django, Symfony

Databases

- SQL/NoSQL: MySQL, PostgreSQL, Firebase, MongoDB, Neo4j

APIs & Protocols

- REST, GraphQL, OAuth, Google APIs, gRPC

Blockchain & Web3

- Solidity, Rust, NFTs, Wallets, Ethers.js, Uniswap

AI & ML

- TensorFlow, Brain.js, OpenAI, Stable Diffusion

Security

- Pen Testing, OWASP, Kali Linux, Phishing

Creative/UX

- Figma, Adobe XD, TouchDesigner, OpenFrameworks

Hardware

- PCB Design, Arduino, Teensy, ESP32, Raspberry Pi

Version Control

- Git, Subversion (GitHub, Bitbucket, NPM)

Experience

kurtgrung.com

Application Architect

May 2025 - Present (5 months)

Application Architect · Full-Stack Software Engineer · Visualization · Creative Coding · Technical Consultancy · Code & Security Audits · Web3, Blockchain & DeFi

Bluegrass

Senior Full Stack Software Engineer (React/Next.js, Zod, Turborepo, Typescript)

January 2024 - April 2025 (1 year 4 months)

Next.js 15 (using React 19), Typescript, Zod, Turborepo, BEM, Sass, Figma, Umbraco, Azure.

Utilising Next: SSR, Rewrites, API routes, Middleware.

Custom component library based on material design.

API(s): OpenWeatherMap, Google Route

Candyspace

Senior Full Stack Software Engineer (Nuxt, Bridge, Vue, Nuxt UI, Firebase, Web Components, Security)

June 2024 - February 2025 (9 months)

Working on the Loadsure project.

- I led the Nuxt migration using Nuxt Bridge, transitioning from Nuxt 2 to Nuxt 3 (Nuxt Bridge).

- Developed custom Vue 3 components and extended Nuxt UI with complex UI.config modifications (Nuxt UI v2 & v3).

- Implemented and optimised Vue 3 Composition API best practices within the Nuxt 2 legacy system.

- Strengthened security compliance with Nuxt Security, Helmet OWASP updates, and Firebase Hosting configurations. Page 3 of 9

- Worked with Web Components, including Custom Elements, Shadow DOM, and Firebase Rewrites/Redirects to merge and patch projects across different codebases.

- Firebase Authentication Providers. JSON Web Tokens (JWTs). OAuth

- Managed CI/CD pipelines, modifying YAML configurations for Google Cloud Build.

- Provided high-level consultation on technology choices for future development strategies.

- Conducted code reviews, ensuring best practices and maintainability.

huumun

Senior Full Stack Software Engineer (Visualisations, Vue3, Nuxt3, TS, D3, Mapbox, Flourish, PHP)

January 2024 - June 2024 (6 months)

Vue/Nuxt framework, Node/Nitro, D3.js visualisations, Three.js, GSAP, Anime.js Animations, Typescript, ESLint, E6+, Flourish API/SDK, Mapbox SDK/API, Leaflet, OSM (Nominatim/OpenStreetMap API), Custom Web Components (Custom elements, Shadow DOM), CI/CD, Azure, ENV, Vite & YAML build configurations.

Detailed technical specifications & documentation for the entire project development lifecycle.

High-level consultancy & strategic guidance on system architecture and technology choices.

Eigen Ltd

Software Developer (React, Remix, TypeScript, ReactFlow, D3, Axios, Neo4j)

July 2023 - December 2023 (6 months)

Prototype Query Tool for building Neo4j dynamic cypher syntax queries for data visualisation.

Technical challenges:

Translating dynamic node(s) into Cypher syntax (I created an algorithm to translate the node data to specific neo4j cypher syntax). Working with multiple prop levels, child and parent dynamically passing data between levels. Building data structures for the Force Graph (Nodes and links) from a graph database driver directly.

Tech Stack:

Remix/React, Javascript, TypeScript, ReactFlow, D3.js & Neo4j Graph database.

Other techniques used when prototyping:

D3 Force, 3D-Force-Graph, Visualisation, Cypher Syntax, Three.js, 3d Visualisation.

nuom

Full-stack Developer (Javascript, Typescript, React, Nuxt, Vue, Node, Apollo, GraphQL, Tailwind)

January 2023 - June 2023 (6 months)

Working on the Helpforce project with the Nuom team as a Remote contractor.

JavaScript, Typescript, Nuxt.js (React & Vue.js), Craft CMS, Node.js, Apollo, GraphQL, Tailwind CSS, Figma, Bitbucket (pipelines), Mixpanel.

Working on new features for the Helpforce v2, translating figma designs to Nuxt code. Building new templates and modules. Interfacing with GraphQL database. Part of the contract I build in a custom integration of Mixpanel into the system to track user event analytics interactions metrics.

<http://helpforce.community>

Freelance

Developer & Designer

2001 - January 2023 (22 years)

Working as a Developer and Designer. Contracting remotely & in-house. Building complete Apps, Websites, Custom code from concepts to production with 2 decades of hands on experience (building experience).

Kinsfolk Digital

Frontend Developer (Javascript, jQuery, CSS3, Ruby, Liquid, Remix, Shopify)

2021 - 2022 (1 year)

Shopify custom code low level modifications to themes & plugins.

Javascript, Remix, jQuery, CSS3, Ruby, Liquid (template engine).

PlayerTrader

Full-stack Developer and Designer (PHP, Javascript, MySQL, React, Node.js, Socket.io, ML, Swift)

January 2019 - 2022 (3 years)

Complete rebuild & re-design of platform with a new technology stack (LAMP). All Design, Frontend, Backend I coded. PHP, Javascript, MySQL, NodeJS, Socket.io, Custom Machine Learning Neural Network Algorithm.

<http://playertrader.com>

ChronoSys

Software Developer (C++, Linux CLI, Bash script, Python, Node.js, Javascript)

2019 - 2020 (1 year)

The Odin Time-Lapse Camera. Raspberry Pi - Bash script / C++ / Python / Node.js / libcamera / Javascript / GUI frontend. UI/UX rebuild design improvements to the GUI interface. Fixes & Updates.

The project consisted of working with the open-source framework libcamera (raspistill & raspivid) for capturing RAW bayer data from the RPi high quality camera module.

Relying heavily with working with the Linux command line interface and the internal Node.js server interacting with the Bash shell scripts directly.

Using both RPi & balenaEtcher imagers were used.

* I had to heavily research into extracting the RAW Bayer data from the RPi libcamera - to convert to DNG. There was many aspects to this project hardware and software related. I thoroughly enjoyed this project. Having a photographers insider knowledge gave me an edge to deliver some more added functionality to the User Interface UX design (and having worked with RAW Bayer data and DNG files + focal lengths and higher understanding of cameras and lenses).

<https://www.chronosys.co.uk>

TrueFans

Full-stack Developer (PWA, PHP, MySQL, Javascript, Swift, NativeScript)

2018 - 2018 (less than a year)

TrueFans subscription based social media app for UK based Football Teams & Players.

PWA React+LAMP Stack and NativeScript for the Mobile Apps.

PlayCrowd

App Developer (Objective-C, Cordova, Javascript, Three.js, PHP, REST API, MySQL)

2017 - 2017 (less than a year)

PlayCrowd Tossr coin flip betting game. Completed in 10 months. App was designed and built from concept to completion. I created the API with PHP/MySQL. App was packaged with Cordova. Three.js for the 3D coin element. The coin flip was touch gesture sensitive for more realism.

Tech Stack: Objective-C, Cordova, Javascript, Three.js, PHP, REST API, MySQL, MapBox, PayPal API

Roller Agency

App Developer (Angular, Javascript, Firebase, Cordova)

2015 - 2015 (less than a year)

PETXI Mobile App - Angular, Javascript, Firebase, Cordova (PhoneGap)

Making UI updates & improvements

Custom Firebase Offline Module Integration

Mission Control

Software Engineer

2012 - 2013 (1 year)

I worked on a number of Full stack projects for Mission Control (formerly Entropy Labs).

Financial Times Passbook Programme (on a revolutionary new advertising and customer voucher system).

Clinique HTML5 interactive ads

Agomo Mobile App

NatGeo / .FX (Fox Channel)

Interactive Designer (GSAP, jQuery, Javascript, HTML5, Flash AS3, Aftereffects)

2009 - 2011 (2 years)

London, England, United Kingdom

Working in-house and remote contracts with the National Geographic & Fox FX team providing them with Rich media animated banner designs and coded campaigns. Custom Ad severing solutions.

Some notable campaigns I worked on - The Walking Dead, True Blood + many others.

Greensock Animation Platform (GSAP) both AS3 and Javascript, jQuery, HTML5, WebGL, Custom particle animations (coded from scratch), Sound design, Video editing, Video encoding, Compression/optimisation of assets for lightning fast distribution.

Eyeblander

Lead Technical Developer (Flash AS3, Javascript, React, jQuery, PHP, MySQL, Objective-C)

July 2005 - August 2009 (4 years 2 months)

London, England, United Kingdom

Lead technical Developer at London office for Eyeblander Production services team building dynamic campaigns for the Rich Media Platform some very interesting and industry firsts (Augmented reality, High definition Video display, Twitter/Facebook iterations with Live Tweeting data) Many more.

Grand Square Marketing

Graphic Web Designer (PHP, MySQL, Javascript, HTML, CSS, ASP, SQL)

March 2001 - October 2004 (3 years 8 months)

Durban, KwaZulu-Natal, South Africa

Working on Multiple Microsites, Banner, Email campaigns, Flash Games and Animations for the Digital Casino Industry on RTG Gaming Casinos.

Integrating the RTG API into multiple microsites using ASP and SQL. Later on we started using PHP/MySQL for the flash integration as it was more dynamic and better to interface with Flash AS2, this is when my passion started for open-source code 2002 in :)

Sign Shop IOW

Signage and Sign Writing (Traditional signage painting, CAD, Photoshop, Illustrator)

1998 - 1999 (1 year)

Isle of Wight, England, United Kingdom

Education

Numerous courses, books & developer conferences

To keep up to date on techniques and coding languages , Computer Programming · (2001 - 2033)

ICESA, Information Technology

Diploma, Specialisation in Software Development & Machine Learning.
· (1999 - 2001)

Newport College, Art & Design

GNVQ · (1996 - 1998)