

# Alex Sklar *Software Engineer*

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I'm a full stack software engineer with an excitement for everything systems: designing, tinkering with, understanding, building, and optimizing them. Even my hobbies involve tinkering with systems; rock climbing (rope systems), being an amateur barista (coffee systems) and playing Factorio (automation systems).

## TECHNICAL EXPERIENCE

### **Syncosaurus, Creator, Software Engineer**

2024 – present

An open-source, serverless framework for real-time, collaborative web applications.

- Engineered a WebSocket communication back end system that enables automatically-synchronized shared state for up to 50 clients and long-term persistent storage
- Substantially reduced the size of inter-client messages via delta updates
- Developed a React SDK that supports optimistic user interface updates, automatic background synchronization, and flexible conflict resolution
- Reduced outbound WebSocket messages from  $O(N^2)$  to  $O(N)$  by migrating from an event-driven to time-driven messaging model
- Built an embeddable web application demo with automatic real-time collaboration utilizing the Syncosaurus framework, tested with ~30 concurrent live users
- Created a command line tool that automates the process of scaffolding a new project with Syncosaurus or integrating Syncosaurus into an existing React application from over 20 steps into a single command
- Contributed to a responsive time-series metrics dashboard backed by a GraphQL endpoint that aggregates data from one Cloudflare GraphQL endpoints and two REST endpoints
- Authored a comprehensive technical case study demonstrating the problem domain and engineering solutions [syncosaurus.github.io/case-study](https://syncosaurus.github.io/case-study) 

### **Full Stack Software Engineer**

2021 – 2024

Developed various open-source projects including:

- Request Dumpster: Tool for collecting and viewing webhooks (Droplets, Nginx, MongoDB, Node.js, Express, React)
- Digital Envelopes: A personal finance budget application (Ruby, Sinatra, PostgreSQL)

### **Atmosfera Visualization, Founder, Visualization Artist**

2016 – present

A digital illustration firm that produces images of unbuilt architecture.

- Established a full production pipeline for a team of up to 3 artists, including a multi-terabyte cloud asset library
- Optimized workflows reducing the average production hours from 36+ to 20 per illustration

## EDUCATION

### **Launch School**

2021 – 2024

A multi-year, mastery-based software engineering curriculum that teaches from first principles.

### **Portland State University**

2009 – 2013

Bachelor of Arts in Architecture

## SKILLS

#### **Front End**

JavaScript, TypeScript, React, Tailwind CSS, WebSockets, MaterialUI, Handlebars, Bootstrap, WebSockets, jQuery

#### **Back End**

Node.js, Express, Go, Ruby, Sinatra, PostgreSQL, MongoDB, REST APIs, GraphQL

#### **Cloud**

Cloudflare (Workers, Durable Objects), AWS (EC2, S3, Lambdas), Heroku, Digital Ocean Droplets

#### **Other**

Git/GitHub, Jest, Object Oriented Programming, Nginx, Postman, IT Operations