Colin Sullivan

Software developer of full-stack web and interactive systems

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Professional Experience

Output

Jan 2022 - Current, Remote

Staff Software Engineer / Lead Full Stack Engineer / Tech Lead • C++ • TypeScript • React / Redux • Python

- Led GUI development of Output Creator through full product development lifecycle with small team
  - Co-led development of communication layer (RPC) and dual Flux store in TypeScript / C++ dual process application
  - Led development of high performance React / PixiJS web GUI application, leveraging HTML/CSS vs. WebGL for performance
  - Presented this architecture work at Audio Developers Conference 2023
  - Developed session file versioning, enabling backwards compatibility and file schema migration for Creator users
  - Developed LLM features, enabling users to create a session with a prompt
- Led development of Output Co-Producer from private beta to market with small team
  - Led feasibility, prioritization, MVP scope and sprint planning for a team of client engineers and backend API developers
  - Collaboration with R&D developers to deploy LLM enhanced search APIs and DNN audio models to product backend API
  - Designed and implemented a web-served GUI, enabling Output to deliver updates to a DAW plugin with no installer
- Extensive code reviews, mentoring and lunch and learns, promoting productive design patterns
- Documenting code quality initiatives: testing best practices, tooling standards, tech debt tracking and prioritization
- Exploring future product directions: prototyping agentic-based user experiences via backend agentic loop infrastructure
- Continuous improvement of DevOps infrastructure, CI checks and CI CMake build systems

Output

Feb 2020 - Jan 2022, Remote

Contract Software Developer • React / Redux • GraphQL • C++ • Electron • DevOps

- Built and shipped Output Hub 2.0, an Electron app for installing plugins and sample libraries on macOS and Windows
- Led Arcade browser 1.4 to completion, the first web GUI version of Arcade: a software music instrument with a Web GUI on a JUCE audio engine
- Led feasibility analysis of Output Creator GUI architecture and toolchain
- Contributing to DevOps & Process best practices

Stamen Design

2019 - 2021, San Francisco, CA

Contract Software Developer & Creative Technologist • React.js • D3.js • Pandas • Ansible • Linux

- Developed interactive touch screen data visualization experience with team of designer & developers for global corporate client
- Built data & visual explorations, engaged with internal teams and clients. Designed deployment infrastructure for Stamen.

Dolby Laboratories

2016 - 2018, San Francisco, CA

Staff Sr. Prototyping Engineer • React.js • Python • Max/MSP • Ansible • Docker • Raspberry Pi • Innovation Process

- Developed experiential and technical feasibility prototypes through concept, scoping and implementation
- Led design thinking & lean startup processes with researchers, engineers, and product managers
- Led implementation of multiple web-based UI prototypes and a physical Raspberry Pi prototype, ran internal demos
- Designed and maintained in-house deep learning Linux infrastructure from bare-metal servers and VMs
- Build prototype audio processing pipelines to inform cloud media processing strategies

Center for Computer Research in Music and Acoustics

Spring 2015, Stanford University

Contract Linux System Administrator • KVM • Apache • Node.js • Ansible

- Virtual Machine provisioning, configuration, migration from old server infrastructure (web, email, file servers)
- Implemented web-based user on-boarding system

Samsung NExD

2014, San Francisco, CA

Contract Software Developer • React.js • Redux • AWS

- Implemented large touchscreen and IoT prototypes for quick design iteration
- Tightly integrated with existing prototypes, collaborating with engineers, UX / industrial designers

Musikara

2013, Oakland, CA

Startup co-founder • Meteor.js • Web Audio • Python • AWS

- Designed and implemented prototypes of music analysis & recommendation engines, UIs for music creation and collaboration

Gracenote

Summer 2012, Emeryville, CA

Media Technology Lab Intern • JavaScript • Three.js • Web Audio API • Python (Flask, Celery) • Linux • iOS (Cocos2D)

- Prototype iPad app for media discovery, built a web-based MIR visualization tool, built a web API to core MIR tools

Concert github.com/concertsoundorganizer/Concert

2010 - 2011, Troy, NY

Project Lead • Python • Django • REST • Backbone.js (Model-View-Controller / Object-oriented React.js precursor)

- Designing and building a web-based audio organizer tool
- Practicing cutting-edge web tech & good object-oriented design as a student

IBM

2010 - 2011, Austin, TX / San Jose, CA

- Developed data visualization tool for large-scale geographic data. Feasibility studies of HTML5 to guide IBM's mobile tech strategy.

Synthetic Cinema International

2007 - 2010, Rocky Hill, CT

- Video Editor, Audio Recording Engineer, Audio Editor, Systems Support, Web Developer

Pyro/FX Entertainment Group

2006 - 2010, Hamden, CT

- Systems support & integration for synchronized computer-controlled pyrotechnics firing system

Education

Stanford University

2013, GPA 3.86

M.A in Music, Science, and Technology: Software for audio/music, signal processing & synthesis, algorithmic music & interfaces

Rensselaer Polytechnic Institute

2011, GPA 3.79

B.S. in Computer Science, Minor in Electronic Arts: Data structures, computer architecture, audio/media technology

Interests

- enabling artists
- music creation
- audio synthesis / generative music
- multimedia / interactive art & performance
- full-stack software design & development
- web software stacks
- entrepreneurship & lean process
- design thinking
- open source
- open standards
- mindfulness practice
- beginner's mind