

# ALEX FANG

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[alexfang.me](http://alexfang.me) | [in /alexfang](https://www.linkedin.com/in/alexfang) | [github /asdfang](https://github.com/asdfang)

## SUMMARY

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Software engineer with graduate degrees in both computer science and classical piano; returning to engineering full-time, bringing technical depth, creative perspective, and passion for building meaningful software.

## TECHNICAL SKILLS

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**Programming Languages:** Python, JavaScript, Java, C/C++, C#, Rust, HTML/CSS

**Frameworks/Libraries:** Express/Node.js, React, Prisma, Web Audio API, Flask, librosa, music21

**Tools/Technologies:** Git, PostgreSQL, Vite, Docker

## PROJECTS & PUBLICATIONS

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**ColorImprov** | React, Express, Prisma+PostgreSQL, Cloudflare R2, Vite, Web Audio API Jan 2026 – present  
*Full-stack web app for learning blues improv* [github.com/asdfang/color-improv](https://github.com/asdfang/color-improv)

- Won 1st at hackathon with original concept (team of 4); independently refactored into modular codebase
- Visualizes real-time keyboard input with adjustable hints; triggers samples, records output with Web Audio API
- Syncs preferences across devices with localStorage fallback, with guided conflict resolution on login
- Deployed on Railway ([colorimprov.alexfang.me](http://colorimprov.alexfang.me)); migrating to React for component-based UI architecture with touch/mobile support, integrating Cloudflare R2 for cloud storage of user recordings

**Continual Dataset Augmentation for Music Generation** | ICML Workshop, 2020 | Python, music21 Jun 2020  
A. Fang et al. "Bach or Mock? A Grading Function for Chorales in the Style of J.S. Bach."

A. Liu, A. Fang et al. "Incorporating Music Knowledge in Continual Dataset Augmentation for Music Generation."

- Designed and implemented grading function evaluating Bach-style chorales across musical features, achieving 92.6% accuracy distinguishing real Bach from AI-generated chorales, outperforming human experts (86.7%)
- Used grading function to filter AI-generated data for training Transformer-based music generation model

## WORK EXPERIENCE

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**Piano Performer & Teacher** Evanston, IL | San Francisco, CA | Seattle, WA  
Freelance | UW Secondary Piano Teaching Assistant | Cascade Piano Studio 2017 – present

- Perform in high-pressure settings as soloist and chamber musician; won SFCM Concerto Competition
- Teach 100+ students over 8 years across all ages and skill levels through private lessons and group classes, identifying conceptual gaps, developing curricula, and individualizing approach based on goals and needs

**Optum | UnitedHealth Group** Schaumburg, IL  
Software Development Intern Jun – Aug 2017

- Investigated Docker containerization; presented proof of concept to managers, addressing dev lifecycle friction
- Contributed to migration of Java IVR application from Tomcat to JBoss

## EDUCATION

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**University of Washington** Seattle, WA  
Doctor of Musical Arts in Piano Performance exp. Jun 2026

**San Francisco Conservatory of Music** San Francisco, CA  
Master of Music in Piano Performance May 2022

**Northwestern University** Evanston, IL  
M.S. in Computer Science Dec 2019

B.A. in Computer Science & B.M. in Piano Performance, *magna cum laude* (GPA: 3.89/4.00) Jun 2019

Relevant Coursework: Machine Learning, Natural Language Processing, Algorithms, Databases, Programming Languages, Systems Programming in Rust, Machine Perception of Music & Audio