ALEX FANG

Seattle, WA | (650) 283-4458 | alex.s.fang@gmail.com | linkedin.com/in/alexsfang | github.com/asdfang

EDUCATION

NORTHWESTERN UNIVERSITY   Evanston, IL
M.S. in Computer Science   Dec 2019
B.A. in Computer Science & B.M. in Piano Performance   Jun 2019

Cumulative GPA: 3.89/4.0, *magna cum laude*

Relevant Coursework: Machine Learning, Natural Language Processing, Algorithms, Database Systems, Systems Programming in Rust, Machine Perception of Music and Audio, Interactive Information Visualization

SAN FRANCISCO CONSERVATORY OF MUSIC   San Francisco, CA
M.M. in Piano Performance   May 2022

UNIVERSITY OF WASHINGTON   Seattle, WA
D.M.A. Candidate in Piano Performance   exp. Jun 2026

PROJECTS & PUBLICATIONS

ColorImprov | JavaScript, Express, Prisma+PostgreSQL, Vite, Web Audio API, Canvas API   Jan 2026 – present
colorimprov.alexfang.me | github.com/asdfang/color-improv
- Conceived and built interactive music education web app where users improvise over 12-bar blues backing track, with canvas grid displaying notes played with configurable visual helpers by difficulty level
- Added user authentication with cross-device preferences sync, resolving conflicts between localStorage state during anonymous usage and persistent account settings on login
- Won 1st at hackathon with original concept (team of 4); independently refactored into modern ES6+ codebase

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 automatic grading function evaluating Bach-style chorales across musical features including pitch, rhythm, intervals, harmony, and voice-leading errors
- Grading function achieved 92.6% accuracy when distinguishing Bach from AI-generated chorales, outperforming human experts at 86.7%
- Used grading function to filter AI-generated data for training Transformer-based music model

WORK EXPERIENCE

Optum | UnitedHealth Group   Schaumburg, IL
Software Development Intern   Jun – Aug 2017
- Built and presented proof of concept on Docker containerization to managers, evaluating benefits across development, testing, staging, and production
- Assisted in migrating Java IVR application from Tomcat to JBoss

University of Washington, Cascade Piano Studio   Evanston, IL / San Francisco, CA / Seattle, WA
Performer, Piano Instructor   2017 – present
- Perform as soloist and chamber musician in professional concerts; won SFCM Concerto Competition
- Teach private lessons and university courses to students of diverse ages, backgrounds, and skill levels; adapting pedagogy to individual needs

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Java, C/C++, C#, HTML/CSS
Frameworks/Libraries: Express, Node.js, React, Flask, librosa, music21
Tools/Technologies: Git, Docker, PostgreSQL, Web Audio API, Vite