



Songyan Zhao

📄 [linkedin.com/in/songyan-silas-zhao/](https://www.linkedin.com/in/songyan-silas-zhao/)

🐙 github.com/SilasZhao

✉️ zhaosongyan7@gmail.com

☎️ +91-5075811895

EDUCATION

- **Carleton College** Jul. 2019 - June 2023
B.A. Computer Science and Mathematics; GPA: 3.86/4.0 Northfield, MN
- **University of California, Los Angeles** Sep. 2023 - June 2025
M.S. Computer Science Los Angeles, CA

SKILLS SUMMARY

Languages: Python, Java, Swift, C, C++/STL, SQL, HTML, CSS, JavaScript, Prolog, R, Scheme, C, Shell Scripting

Frameworks: Spring Boot, MyBatis, Flask, Pytorch, Pandas, Pytorch, scikit-learn, Numpy, Scipy, Scrapy, Angular, Node.js, .Net, JQuery, Fabric, D3.js, TensorFlow

Databases/Tools: MySQL, PostgreSQL, MSSQL, Core Data, Redis, Docker, Dplr, Gradle, Maven, gdb

Knowledge: OOP/OOD, design patterns (MVC, Factory), machine learning, Data Analysis

ACADEMIC PROJECTS

- **Explainable AI: PyTorch based VAE for Music Generation** June 2022 - Jan. 2023
Researcher, Advisor: Prof. Nick Bryan-Kinns, Queen Mary University of London Remote
 - **Data collection:** Developed the crawler with Scrapy to collect MIDIs from internet
 - **Data preprocessing:** Used Music21 & abcFormat to encode music data
 - **Data modeling:** Built the variational autoencoder with PyTorch, and regularized the latent vectors so that users can have more control over the output
 - **Result analysis and hyper-parameter tuning:** Used sklearn & Matplotlib
- **Mobile App: Carls seek Carls** Jan. 2023 - May. 2023
Project Leader, Carleton College Northfield, MN
 - Used Core Data, Foundation, UIKit to trace users' location data and analyze their behavior and schedule
 - Used Google Map API to get the location data from the users, in order to infer their food preference
 - Implemented REST API, and visualized location data using MapKit and Swift Charts
- **Modify Minecraft to Simulate Natural Selection Using Java Fabric** Sept. 2021 - Dec. 2021
Research Assistant, Advisor: Prof. Anya Vostinar, Carleton College Northfield, MN
 - Modified colors, reproduction, life cycle of the sheep and hunting behaviors of the wolves
 - Used Gradle to manage the project and log4j for logging

WORK EXPERIENCE

- **RHINO website: Bootstrap 4 based Online Sports Course Service** Sept. 2021 - Mar. 2022
Software Developer Intern at RHINO, Beijing, China Remote
 - Used Pymssql to record the course history of users
 - Used Bootstrap4 to create the front-end, and implemented REST API using python
 - Used JQuery and AJAX to create token for authentication
- **TianTianBaiTao: Spring Boot based E-commerce Service Mobile APP** June 2021 - Sept. 2021
Software Developer Intern at Do-Global Beijing, China
 - Used Java Spring-Boot, Redis, MySQL, MyBatis to create the back-end of “my account” section of this app
 - Implemented the REST API; used Spring Security for authentication
 - Integrated Lombok and used Log4j for logging; maven to manage the project
 - Automated the deployment with Docker

PUBLICATIONS & PRESENTATIONS

- Nick Bryan-Kinns, Bingyuan Zhang, **Songyan Zhao**, and Berker Banar “Exploring Variational Auto-Encoder Architectures, Configurations, and Datasets for Generative Music Explainable AI.” MIR-2022-12-377.R1 - Machine Intelligence Research, 2023
- **Songyan Zhao**, Berker Banar, and Nick Bryan-Kinns “VAE based explainable AI for music generation”. Oct. 2022. Poster presentation at Research and Internship Symposium, Carleton College