XUENING WANG

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Actively Seeking Summer 2024 Software Engineer/Machine Learning Engineer Internship Opportunities

EDUCATION

Cornell Tech (Cornell University), New York, NY   Exp. Aug 2023 - May 2025
Master of Science in Information Systems, with a concentration in Connective Media | Merit Scholarship
Relevant Coursework: Machine Learning Engineering, Applied Machine Learning, Algorithms and Data Structures for Applications

University of Liverpool, Liverpool, UK
Bachelor of Science in Computer Science | First Class Honors | GPA: 3.85/4.0 | Ranked Top 5%   Sep 2019 - Jul 2023
Relevant Coursework: Data Structures and Algorithms, Computer Networks, Operating Systems, Software Engineering, Machine Learning, Big Data Analytics, Artificial Intelligence, Computer Systems Security, Advanced Object-oriented Programming

TECHNICAL SKILLS

Programming Languages: Java, Python, C++, C#, JavaScript, HTML, CSS, SQL, PHP, MATLAB
Frameworks: PyTorch, TensorFlow, JQuery, Flask, Spring Boot, React.js, Node.js, OpenCV
Tools and Platforms: AWS, Alibaba Cloud Services, Docker, Bash/Shell, Postman, ActiveMQ, Jenkins, Git & GitHub

EXPERIENCE

Xi'an Jiaotong-Liverpool University, Music Informatics Research Group, Research Assistant, China   Oct 2021 – Mar 2023
- Engineered AI-powered solutions for long-range and cohesive music composition; built generative models in **PyTorch** and **TensorFlow**
- Developed a Transformer-XL model for full-song music generation with melodic, rhythmic, and harmonic variations; introduced structure-enhanced token encoding, increasing generative accuracy by 20.1%, melodic coherence by 9.5%, and user evaluations by 12.7%
- Built **C++** and **Python** music segmentation algorithms combining music theory and data-driven approaches, achieving a 98.7% accuracy
- Integrated melody identification models to annotate classical piano music datasets; optimized the model by incorporating transfer learning techniques, boosting the accuracy by 23.5%; developed VAE and GAN-based models for Mozart-style piano accompaniment generation

Jiangxi Yufeng Intelligent Agricultural Technology Co., Machine Learning Engineer Intern, China   Jul 2021 - Oct 2021
- Built and deployed a Faster R-CNN object detection model for citrus disease identification, utilizing a CI/CD pipeline via **Jenkins**
- Augmented the dataset using image crawling and GAN-generated synthetic images to address data imbalance, increasing the model's mAP from 83.1% to 94.8%; developed a cloud-based annotation tool integrated with **AWS** services to improve the labeling workflow
- Packaged models into **RESTful APIs** with **Flask** and integrated message queuing using **ActiveMQ**

Emerson Electric Co., Software Engineer Intern, China   Jun 2020 - Aug 2020
- Built and deployed a product repair application using **React.js** for the frontend and **C#** with .NET framework for the backend
- Developed **RESTful APIs** using ASP.NET Core, managing 1 million+ records for optimized CRUD operations via **MongoDB**
- Ported and expanded the application into a WeChat Mini-Program; integrated WeChat's native functionalities of QR code scanning and location-based services to boost user engagement, increasing daily active users by 18%

PROJECTS

[**AI-powered Music Production System**](#), [**Poster and Demo**](#) (PyTorch, Flask, Alibaba Cloud ECS, Docker)   Jun 2022 - Aug 2022
An "AI Songwriter" application which generates melodies and piano accompaniments based on user's vocal input
- Innovated an end-to-end AI-powered pipeline with singing voice transcription, music composition and real-time music synthesis
- Implemented deep generative models in VAE and Bi-LSTM architectures using **PyTorch**, integrated state-of-the-art APIs for singing voice transcription; customized metrics and loss functions, enhancing the training process and improving the baseline by 13.7%
- Developed and deployed a **Flask**-based application on Alibaba Cloud ECS; integrated dedicated front-end and GPU servers with real-time audio segment streaming to enhance system efficiency, reduced user waiting time by 28%

[**Student Social Media Platform Application**](#), (Spring Boot, JQuery, Mybatis, Redis, Alibaba Cloud ECS)   Mar 2022 – Jun 2022
- Developed the frontend with **JQuery** and **Bootstrap CSS**; implemented the backend using **Mybatis** within **Spring Boot**
- Optimized the system performance by integrating **Redis** for data caching, resulting in a 40% reduction in database query times
- Deployed the application on Alibaba Cloud ECS using **Docker**, integrated with a CI/CD pipeline via **GitLab**

[**File Synchronization Application**](#), (Python, Socket, TCP/UDP)   Nov 2021 – Dec 2021
- Developed an end-to-end automatic file synchronization application via **Python Socket** and object-oriented programming, supporting 500 MB file transmission across different devices with breakpoint resume and dynamic port allocation
- Innovated a novel TCP-based application-layer protocol with specialized message types and error-handing approaches
- Applied multithread techniques to overcome concurrency issues, improving the transmission rate by 36%