

# Yuren Sun

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## EDUCATION

### **Stanford University**

September 2022 - June 2024

Master of Science in Computer Science, Information Management and Analytics Specialization, 4.00/4.00

Related Courses: Machine Learning on Embedded Systems, Bioinformatics

Teaching: Course Assistant for Computer Graphics (Blender and Python) and Mathematical Foundations of Computing (C++)

### **University of Wisconsin – Madison**

July 2018 - December 2021

Bachelor of Science in Computer Sciences, Economic, and Mathematics with Comprehensive Honors, 3.97/4.00

Related Courses: Algorithm, Database, Linear Optimization, Operating Systems, Stochastic Processes, UX, Wearable Technology

Related Awards: Holstrom Environmental Research Fellowship (2021), CS Department Golden Brick Award (2019 & 2021)

Teaching: Peer Mentor for Operating Systems (C and Linux) and UX development(React and JavaScript)

**TECH SKILLS:** Python, C/C++, Java, JavaScript, React, HTML, CSS, TensorFlow, SQL, Swift, Linux, Git, Tableau, Stata

## WORK EXPERIENCES

### **Software Development Engineer Intern, Amazon Web Services, East Palo Alto, CA**

June 2021 - September 2021

- Designed and implemented a project for local reproductions on non-data dependent issues to improve debug abilities for Redshift
- Created catalog functions to extract names of tables and views from queries and trace down dependencies of views with C
- Developed the pipeline to retrieve the data definition languages (DDLs) from query texts with automatic dependency tracking
- Developed broad tests on catalog functions and the whole project for the feasibility of functionalities and coverages of edge cases

### **Innovations Intern, American Family Insurance, Madison, WI**

May 2020 - August 2020

- Developed the prototypes and the minimum viable products (MVPs) with HTML, JavaScript, and CSS
- Designed, implemented, and refined the user interface based on the interviews with target customers
- Deployed the prototypes and the MVPs with serverless web applications for user data collections with Amazon Web Services (AWS)
- Managed AWS resources with Terraform to enhance the workflow and automated the source code delivery with CI/CD pipelines

## PUBLICATION

Sun, Y., et al. Classification of animal sounds in a hyperdiverse rainforest using convolutional neural networks with data augmentation.

*Ecological Indicators*, vol. 145, 2022, p. 109621., <https://doi.org/10.1016/j.ecolind.2022.109621>.

## SELECTED ACADEMIC AND RESEARCH EXPERIENCES

### **Frog Audio Detection**

September 2022 - Present

Utilize convolutional neural networks with data augmentation to classify the frogs based on their sounds with Python and TensorFlow, and develop pipeline to process the audio data and detect the occurrences of frogs in the recordings of two years

### **Real-time Categorizations and Annotations of Runway Clothes**

September 2022 - December 2022

Accelerated the deep learning models with post-training quantization, developed IOS application for real-time categorization and annotation on the runway clothes, and compared the accuracy, recall, and latency among models with different quantization methods

### **Smart Ankle Sensor**

September 2021 - December 2021

Enhanced ankle braces that track movements with sensors, send sensor data to phone with microcontroller and Bluetooth, and notify users when the wrong movements are detected with an iOS application to avoid further injury from mild ankle sprains

### **Stethoscope for the Rainforest**

January 2020 - December 2021

Developed pipeline to generated dataset and used convolutional neural networks to classify the animals with small sample sizes based on audio with Python and TensorFlow; improved the model accuracy to over 90% with transfer learning and data augmentation; and researched on model performances on small datasets and the minimum number of samples required for desired model performance

### **Page Replacement Simulator**

November 2020 - December 2020

Read the trace files with over 10 million traces, created the process table as a hash table, and simulated the scheduling process and page replacement of the traces with linked lists and hash table, and FIFO, LRU and Clock algorithms in C in Linux environment