Rachael Wei

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EDUCATION

University of Illinois at Urbana-Champaign (**UIUC**)   **Dec 2023**
Bachelor of Science in Computer Science   GPA: 3.91/4.0

Relevant Coursework:

Intro to Algorithms & Models of Computation	Distributed Systems	Machine Learning	Applied Parallel Programming
Programming Languages and Compilers	Database Systems	Applied Machine Learning	Computational Photography

TECHNICAL STRENGTHS

Languages: C++, C, C#, Go, Python, Java, Swift, SwiftUI, Typescript, Bash
Libraries/Frameworks: Git, Pytorch, React, Flask, React Native, Node.js, MongoDB, SQL, Kubernetes, Figma

WORK EXPERIENCE

MongoDB Software Engineering Intern   June 2022 – Aug 2022, June 2023 – Aug 2023
- Developed and pushed a full-stack failure-resolution suggestion system into production using Python and Typescript that utilizes multiple cronjobs to cluster build failures, improving error analysis efficiency
- Built a microservice deployed on Kubernetes that generates build failure metrics on false positives
- Managed project lifecycles by composing technical design documents, outlining APIs, and defining project milestones

Computer Vision Group Undergraduate Research Assistant   Sept 2022 – Present
- Developing a Dynamic Neural Radiance Field (DNeRF) Swift application under Professor Derek Hoiem and Jae Lee that uses LiDAR data and images to reconstruct interactive 4D videos from a limited number of static frames
- Conducted and reproduced literature review on NeRF and Dynamic View Synthesis techniques including DNeRF

CS124 Honors Course Lead, Project Manager   Jan 2021 – June 2023
- Led operations for an intro class of 100+ and coordinated with 50+ staff members to supervise 30+ project groups
- Managed projects using agile methods, including a SwiftUI travel itinerary app and a business success predictor
- Designed and delivered online lectures on topics including Git, Bash, frontend, and backend

Carnegie Mellon HCI Institute Research Intern   June 2021 – June 2022
- Coded and tested agent serialization in Python to cut retraining time to zero in AL, an intelligent tutoring software
- Optimized AL's learning by implementing a text-to-math expression parser using Spacy and Python
- Implemented interactive graph visualization of AL's real-time brain using React and D3

PROJECT HIGHLIGHTS

MapleJuice: MapReduce on a Distributed File System
- Designed and implemented a fault-tolerant distributed file system using Go and Gossip-style heartbeating that handles replication and simultaneous reads and writes.
- Built a MapReduce-inspired parallel cloud computing framework on the file system using hash and range partitioning.

ARPaint: Augmented Reality iOS App
- Led the development of an Augmented Reality app using Swift that allows users to draw images in a 3D environment by tracing their fingers midair using Apple's ARKit and SceneKit
- Tracked users' fingers with Apple's Vision framework and determined drawing location using plane detection

Muxi: Spotify-Integrated Social Media App with Recommendation Engine
- Utilized the MERN (MongoDB, Express, React, Node) stack and Flask to develop a social media platform that enables users to follow other Spotify users, message them, and rate their favorite songs
- Incorporated an ML song recommendation and enjoyability prediction engine with collaborative filtering

EXTRACURRICULAR ACTIVITIES

CS Student Ambassador/Research Scholar (CS STARS)   Sept 2021 – Dec 2023
- Worked with the CS department as a departmental leader to recruit and empower undergraduate women to CS
- Planned outreach initiatives for local elementary schools to enhance CS education accessibility

Disruption Lab iMedia Innovation Engineer   Jan 2022 – June 2022
- Built backend API functions in C# to efficiently parse search results and fetch filter options in a video-uploading service
- Replaced hardcoded instances in the frontend with dynamic data using Redux and React

CS126 (Software Design Studio)/ CS225 (Data Structures) Course Assistant   Jan 2021 – Sept 2021
- Ran weekly code reviews to go over student code in a group setting to help them write readable and modular code
- Hosted office and lab hours to answer questions about course projects and assignments in C++ and Java