Yuan Ren

Android Development, Web Programming, Machine Learning, Input and Interaction Techniques
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OVERVIEW

- Rapid learner with the capacity to adapt to challenges, grounded in a robust programming foundation
- Exceptional problem-solving skills, adept at identifying improvements and resolutions

EXPERIENCES

Boston Scientific: Software Developer May. 2024 - Now
- Architect, design, develop and release innovative high performance medical device software

Google: Software Engineer Intern May. 2022 - Aug. 2022
- Developed a prototype for seamless translation on Android AR glasses and its companion phone for bilingual conversations
- Designed a comprehensive survey to assess user feedback on the prototype, focusing on usability and workload
- Outperformed Google Translate conversation mode, revealing **46%** less physical demand and **25%** less frustration
- Achieved a **21%** higher natural conversation flow score compared to Google Translate

University of California, Merced: Assistant Specialist May. 2018 - Aug. 2019
- Researched on input and interaction methods on wearables

EDUCATION

Ph.D Candidate, Electrical Engineering & Computer Science Sep. 2019 - May. 2024
University of California, Merced, CA
Research Area: Interaction & Input Methods on Wearable Devices, Haptics Feedback in VR/AR

Master of Science, Computer Science Jan. 2015 - Jan. 2017
University of Southern California, Los Angeles, CA

Bachelor of Engineering, Software Engineering Sep. 2010 - Jun. 2014
Beijing Jiaotong University, Beijing, China

PROJECTS

BinStars: A Netflix-Like TV Interaction App Oct. 2022 - Jan. 2023
- Created an Android TV app resembling Netflix, featuring intuitive movie browsing and playback options
- Enhanced media controls via ExoPlayer, achieving a **19%** reduction in user wait times with optimized response
- Implemented a movie search feature with intelligent suggestions, revealing **30%** reduction in search query response time
- Integrated X-ray features, providing users with instant access to **20%** more detailed content information

Skills: Java, Android, EXOPlayer, JUnit

Breast Cancer Detector: A CNN-based Image Classifier github link Oct. 2022 - Nov. 2022
- Developed a CNN-based breast cancer detection system distinguishing between benign and malignant cases
- Demonstrated exceptional accuracy with a recognition rate exceeding **93%**
- Used data visualization for clear and accessible presentation of complex information

Skills: Python, TensorFlow, CNN, Kaggle

WeShare: A Facebook-Like Interaction App Aug. 2021 - Nov. 2021
- Developed a performant Facebook-like social web app with React-Redux for seamless status updates and user interactions
- Implemented user authentication through JSON Web Tokens (JWT) for enhanced security and efficiency
- Integrated real-time notifications with socket.io, resulting in a **30%** improvement in user engagement metrics
- Unit tested codebase with Mocha, ensuring robustness and stability, leading to a **25%** reduction in bug instances
- Optimized group collaboration with JIRA, leading to a **20%** efficiency boost and on-time deliverables

Skills: ReactJS, Redux, Node.js, Express, Webpack, MongoDB, Bootstrap, Mocha, Postman

Pink: An Android Client for Dribbble github link Apr. 2018 - May. 2018
- Designed a card-based UI for presenting Dribbble artworks on Android, prioritizing user engagement
- Optimized user authentication via Dribbble API with OkHttp, reducing login times by **25%**
- Utilized Picasso for efficient image loading, resulting in a **40%** speedup and **15%** data reduction
- Engineered interactive features, leading to a **20%** increase in user interactions and a **25%** rise in engagement

Skills: Java, Android, OkHttp, Picasso, Postman, JUnit

Appoint Now: Online Medical Appointment System Sep. 2017 - Oct. 2017

- Engineered a hybrid TCP/UDP architecture in a C++ desktop application boosted scheduling performance by **20%**
- Implemented patient authentication and booking mechanisms via TCP, reducing latency by **15%**
- Optimized sorting algorithm for **20%** increased insurance plan efficiency
- Streamlined UDP for appointment confirmation, boosting system responsiveness by **25%**

Skills: C++, Socket Programming, SQLite, Visual Studio

OS: Weenix Operating System Jan. 2017 - May. 2017

- Developed kernel-level processes and threads with features including cancellation, forking, and scheduling
- Applied polymorphism in the Virtual File System (VFS) for a uniform implementation of memory and file objects
- Implemented system calls for File System and Virtual Memory, bolstering user space robustness

Skills: C, QEMU, gdb

ZuFangBao: A Web App for Credit Card Rental Payment Sep. 2014 - Dec. 2014

- Designed and implemented the RESTful Event Management API Microservices using Spring MVC
- Configured efficient Hibernate fetch and flush strategies with a **19%** enhancement in Data Access Layer performance
- Implemented batch updates strategically, with the goal of achieving a **20%** improvement in query efficiency
- Developed unit testing for the Data Access Layer, optimizing performance through Spring Data JPA (Hibernate)

Skills: Java, Spring, Hibernate, JQuery, SQL, Bootstrap

Automatic Number Plate Recognizer May. 2014 - Jun. 2014

- Developed a C++ desktop app with an overall **15%** reduction in processing time for plate uploading and recognition
- Improved data transfer speed in a server-client model by **20%** using TCP socket programming and MFC libraries
- Improved recognition accuracy by **10%** through advanced algorithms, including an artificial neural network
- Performance gains were driven by strategic optimizations like parallel processing and enhanced memory utilization

Skills: C++, Grayscaling, Binarization, Bilateral Filters, Socket Programming, MFC

AWARDS

Best Paper Awards. ACM Interactive Surfaces and Spaces Conference (ISS) 2022
Best Paper Honorable Mention Award. ACM Interactive Surfaces and Spaces Conference (ISS) 2021

FELLOWSHIP

Summer EECS Bobcat Travel Fellowship at UC Merced 2022
Summer EECS Bobcat Summer Fellowship at UC Merced 2020

PUBLICATIONS

More details here

[1] Veena Sumedh, Peter Ly, Yuan Ren, Cristina Sylla, Abigail Plata, Ahmed Sabbir Arif. *Impact of Static and Animated eBook Illustrations on Children's Engagement, Enjoyment, and Information Recall*, ACM Human Factors in Computing Systems Conference Extended Abstracts, **CHI EA 2024**.

[2] Wendy Haw, Yuan Ren, Kianna Ng, Ahmed Sabbir Arif. *Investigating the Effects of Self-selected Pleasant Scents on Text Composition and Transcription Performance*, ACM Human Factors in Computing Systems Conference, **CHI 2024**.

[3] Yuan Ren, Ahmed Sabbir Arif. *Investigating a Force-Based Selection Method for Smartwatches in a 1D Fitts' Law Study and Two New Character-Level Keyboards*, Conference on Tangible, Embedded, and Embodied Interaction, TEI 2023

[4]Gulnar Rakhmetulla, Yuan Ren, Ahmed Sabbir Arif. *GeShort: One-Handed Mobile Text Editing and Formatting with Gestural Shortcuts and a Floating Clipboard*, ACM Mobile Human-Computer Interaction Conference, MobileHCI 2023.

[5] Ghazal Zand, Yuan Ren, Ahmed Sabbir Arif. *TiltWalker: Operating a Telepresence Robot with One-Hand by Tilt Controls on a Smartphone*, ACM Interactive Surfaces and Spaces Conference, ISS 2022

[6] Tafadzwa Joseph Dube, Yuan Ren, Hannah Limerick, I. Scott MacKenzie, Ahmed Sabbir Arif. *Push, Tap, Dwell, and Pinch: Evaluation of Four Mid-Air Selection Methods Augmented with Ultrasonic Haptic Feedback*, ACM Interactive Surfaces and Spaces Conference, ISS 2022 **(Best Paper Award)**

[7] Yuan Ren, Ahmed Sabbir Arif. *Stepper, Swipe, Tilt, Force: Comparative Evaluation of Four Number Pickers for Smartwatches*, ACM Interactive Surfaces and Spaces Conference, ISS 2021 **(Honorable Mention Award)**

TEACHING ASSISTANT

CSE 021: Introduction to Computing II University of California, Merced
CSE 155: Introduction to Human-Computer Interaction University of California, Merced
CSE 120: Software Engineering University of California, Merced
CSE 140: Computer Architecture University of California, Merced

CSE 022: Introduction to Programming University of California, Merced

PROFESSIONAL SERVICE

Reviewer for Conference: **ISS** 2024, **TEI** 2024, **DIS** 2023

PRESENTATIONS

Present an extended abstract *Impact of Static and Animated eBook Illustrations on Children's Engagement, Enjoyment, and Information Recall* on CHI 2024 2024
Honolulu, Hawaii

Present a work *Investigating the Effects of Self-selected Pleasant Scents on Text Composition and Transcription Performance* on CHI 2024 2024
Honolulu, Hawaii

Present a paper *GeShort: One-Handed Mobile Text Editing and Formatting* on MobileCHI 2023 2023
Athens, Greece, remotely

Present a paper *A Force-Based Selection Method for Smartwatches* on TEI 2023 2023
Warsaw Poland, remotely

Present a work *A Force-Based Selection Method for Smartwatches* on Sen. Jim Costa's visit 2020
Merced, CA

COURSES TAKEN

Advanced Human-Computer Interaction (HCI), Software Architecture, Advanced Mobile Device and Game Consoles, Computer Networks, Game Probability Theory and Mathematical Statistics, Introduction to Digital Media, Analysis Scientific Writing and Presentation Skill

SKILLS

Languages: Java, Python, Swift, JavaScript, C
OS: Linux/Unix, MacOS, Windows
Web Technologies: Node.js, React, Redux, Django, Spring
Data Analysis: Python, SPSS
Other: Video Editing and Publishing Operations