# Ruihua Sui

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## Education

**University of Illinois at Urbana-Champaign (UIUC)**                                          *Urbana, IL*

BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE, GPA: 3.87/4.0                    *01/2018-12/2020*

- **Advanced Courses** Numerical Analysis, Database Systems, Programming Languages & Compilers, Graph Theory

## Publications

**Improving student accessibility, equity, course performance, and lab skills: How introduction of ClassTranscribe is changing engineering education at the University of Illinois**                    *ASEE 2020*

LAWRENCE ANGRAVE, KARIN JENSEN, ZHILIN ZHANG, CHIRANTAN MAHIPAL, **RUIHUA SUI**, MARYALICE S. WU, ROB KOOPER, HONGYE LIU                    *[Paper] [Code]*

## Awards & Honors

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| 2020 | **ICCP James N. Snyder Memorial Award** University of Illinois at Urbana-Champaign | |
| 2020 | **Nominated for Illinois Innovation Prize** University of Illinois at Urbana-Champaign | |
| Present | **James Scholar** University of Illinois at Urbana-Champaign | |
| Present | **Dean's List Student** University of Illinois at Urbana-Champaign | |

## Research Experience

**ClassTranscribe**                                                                            *UIUC*

LEADING SOFTWARE DEVELOPER; SUPERVISOR: **PROF. LAWRENCE ANGRAVE**; [CODE]                *May 2019 - PRESENT*

- Designed and developed the entire front-end of ClassTranscribe (classtranscribe.illinois.edu) using React JS + Redux JS. ClassTranscribe an educational video website supported by personnel and awards from NCSA, Microsoft Corp, and Gies College of Business at the University of Illinois.
- Implemented a client-side ePub file generator and a online video-to-ePub generating platform. The ePub file generator can convert the lecture videos on ClassTranscribe into markdown-based ePub books; and the platform allows Instructors to manage chapter breakpoints, create audio descriptions to images, and embed mathematical equations and formulas.
- Created a highly accessible video player that synchronizes playback of two videos with closed captions, audio descriptions, searchable and editable transcriptions, and customizable user preferences.

**Contact Tracer**                                                                            *UIUC*

RESEARCH ASSISTANT; SUPERVISOR: **PROF. HARI SUNDARAM**                                *June 2020 - PRESENT*

- Designed a Bluetooth Low Energy (BLE) system for iOS devices to broadcasting and scanning the iBeacon packets for distance measurement that is used by contact tracing.
- Built the proto version of the contact tracing application for iOS using SwiftUI, which allows users to discover the nearby iBeacon packets using the BLE system.
- Collected beacon/BLE packets through the designed BLE system to train Packet Reception Probability (PRP) model that improves accuracy of distance measurement.

**Opico**                                                                                    *UIUC*

RESEARCH ASSISTANT; SUPERVISOR: **PROF. RANJITHA KUMAR**                                *August 2019 - May 2020*

- Maintained the API services for Opico, a mobile social media application used to study emoji-first communication in modern society, that allows people to share and discover places through emoji reactions.
- Built backend services for the new feature *Collection*, enable user to group their emoji reactions, using Feathers JS and PostgreSQL. This feature could help us further study the context that the emojis are being used.
- Analyzed the collected data and studied the implications of emoji-first communication for future social communications platforms.

## Skills

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| **Languages** | Python, JavaScript, C/C++, Java, HTML5, CSS3, Swift, Haskell |
| **Frameworks** | Node JS, React JS, React Native, Redux, Feathers JS, Python Flask, Docker |
| **Database Management** | MySQL, PostgreSQL, MongoDB |