

# RUXIN (DAISY) WANG

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## EXPERIENCE

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| <b>Louisiana State University, Baton Rouge, LA, USA</b><br><i>PhD. in Computer Science (CS)</i>    | <i>Aug. 2020 - Present</i>   |
| <b>HSBC Bank (China) Company Limited, Guang Dong, China</b><br><i>Software Engineer</i>            | <i>Aug. 2019 - Jun. 2020</i> |
| <b>Syracuse University, Syracuse, NY, USA</b><br><i>M.S. in Computer Engineering (CE)</i>          | <i>Aug. 2017 - May. 2019</i> |
| <b>Northeast Forestry University, Harbin, China</b><br><i>B.S. in Electronics Engineering (EE)</i> | <i>Aug. 2013 - May. 2017</i> |

## RESEARCH INTERESTS

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Mobile sensing and computing, Cyber Security and privacy, Deep Learning and Computer Vision.

## PUBLICATION

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### Louisiana State University, Baton Rouge, LA, USA

- R. Wang, K. Madden, C. Wang, "Low-effort User Authentication for Kiosk Systems based on Smartphone User's Gripping Hand Geometry." *Late Breaking Work of the 2022 CHI Conference on Human Factors in Computing Systems*, 2022.
- R. Wang, L. Huang, and C. Wang, "Preventing handheld phone distraction for drivers by sensing the gripping hand," in *Proceedings of the 18th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (IEEE MASS)*, 2021.
- R. Wang, L. Huang, and C. Wang, "Poster: Distracted Driving Detection By Sensing The Hand Gripping Of The Phone," in *Proceedings of The 27th Annual International Conference On Mobile Computing And Networking*, 2021.

### Northeast Forestry University, Harbin, China

- R. Wang, "Tentative Analysis of Electric Automatization Integrated Application on Electrical Engineering" in *Scientific Chinese*, Sep., 2016.
- R. Wang, "Research on Artificial Intelligence Application on Electrical Engineering and Automation" in *Science and Technology Innovation Herald*, Sep., 2016.

## PROJECTS

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<b>VR Device User Authentication via Skull-reverberated Sounds</b>	<i>05/2021 - Present</i>
<i>Description: To design a system allows a user to gain access by interacting with the VR device</i>	

- Developed a VR application on the Unity platform in C# to simultaneously send acoustic sensing signals and record the returned sounds via microphone.
- Designed a sound processing mechanism to denoise, synchronize and segment individually unique audio segments. Then a series of deep learning algorithms are applied to extract the features from the audio segments for user identification.

## **User Identification via Discriminating Gripping Hand Image**

08/2020 – 12/2020

*Description: To develop a system that verifies a user's identity via a holding device image*

- Developed a pre-processing scheme to extract the useful hand features from holding device images by resizing, background removal, and image illumination
- Fed the post-processing image into a CNN-based algorithm to get the classification prediction, then compared the prediction with the user ID token to verify if the user holding the phone's identity matches the user ID token presented by the smartphone.

## **Maintaining and enhancing financial transaction platform, HSBC, CN**

08/2019 – 07/2020

*Description: Software Developing and Testing.*

- Designed and realized an automatic tool in JAVA — IPAS Adapter, which could detect the zip file from the zip file stream every 5 seconds. Once zip files are available, zip files will be inserted into the source wordlist table. And then, the adapter begins to call the unzipped server, which resides in the IPAS Adapter. The adapter will create new threads to process the unzip files into the HSBC database after the unzipping server returns the unzip files successfully.
- Participated in developing the Global Investment Report (GIR) System. The GIR system is intended to be as configurable as possible so that the content can be fitted appropriately to a range of mandates. The flexible GIR system offers in this regard will be employed as much as possible so that end-user teams can include, exclude and configure content as required. With that GIR System, businesses could generate customizable reports and export their needed reports in various forms immediately (e.g., PDF, Excel, Word).

## **AttendU (Website in JAVA), Syracuse, NY**

08/2018 – 12/2018

*Description: To develop a web-based single-page application designed for users to do attendance checking.*

- Implemented MVC architecture provided by Angular.JS to realize data manipulating, content displaying, data presentation, and data packaging linking.
- Used Spring Boot as the framework. Designed four separate processes, the corresponding APIs in JAVA, and implemented Microservice to manage the above four processes.
- Utilized MySQL as the database, translated SQL statements into JAVA methods, and accommodated data into customized objects using Mybatis.

## **Source Code Analyzer in C, Syracuse, NY**

01/2018– 05/2018

*Description: To develop a software tool for code analysis, currently supporting C++/C/Java*

- Implemented a client with GUI using the WPF framework in C on the client side.
- Designed and implemented a code analyzer that can extract all useful information from the files stream and then analyze the dependence relationships.
- Implemented asynchronous message-passing communication channel by using WCF to pass HTTP-style messages. WPF framework and C are used to implement a client with GUI.

## **Remote Code Repository in C++,, Syracuse, NY**

01/2018– 05/2018

*Description: Developed a Remote Code Repository responsible for managing source code resources (e.g. files and documents) and access the Repository's functionality over a communication channel.*

- Used several design principles, such as the Single Responsibility Principle and Open Close principles.
- On the client side provides a Client program that can upload and download files by implementing a client with GUI and the WPF framework.

- On the server side provides a Repository Server that provides functionality to check in, check-out, and browse packages specified by NoSQL database queries.
- Designed and implemented a NoSQL database that could support CRUD operations by using the unordered map in C++ on the server-side.
- Implemented an HTTP-style message protocol and socket-based asynchronous message-passing communication channel using the WCP framework in C++.

## AWARDS

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| • ACM MobiCom2021 Student Research Competition (SRC) semifinalists    | <i>03/2022</i> |
| • ACM MobiCom2021 Travel Grant  | <i>12/2021</i> |
| • ACM MobiCom2021 N2Women Fellowship                                  | <i>11/2021</i> |
| • LSU 4th EECS Graduate Student Research Symposium Meritorious awards | <i>04/2022</i> |

## TECHNICAL STRENGTHS

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**Programming Languages:** Python, JAVA, C++, C#, MATLAB, SQL

**Machine Learning Frameworks:** Tensorflow, Keras, Pytorch

**Databases:** MySQL, NoSQL, MongoDB

**Web Development:** SpringBoot, Spring, Angular.js, WCF/WPF, Mybatis, MAVEN, CSS, HTML