

# Kaichun Yang

Phone: +1 6148157933 | Email: ky27@illinois.edu | Website: <https://focusedconvergence.github.io/>

## EDUCATION

### The Ohio State University (OSU)

**Bachelor of Science** in Data Analytics; GPA: 3.81/4.00

**Minor:** Mathematics

**Skills:** C, Java, Python, R, Assembly Language, PHP, html, Javascript, CSS

**Honor:** Dean's List (Autumn 2020, Spring 2021, Autumn 2021, Spring 2022, Autumn 2022)

**Columbus, OH**

Aug. 2020-May 2024

### University of Illinois Urbana-Champaign

**Master of Computer Science (MCS)**

**Skills:** C, Java, Python, R, Assembly Language, html, Javascript, CSS

**Champaign, IL**

Aug. 2024-present

## RESEARCH

### Judging Application Types Based on the Data Transmitted by VR Devices

Dec. 2021-Apr. 2022

*Supervised by Ph.D. Candidate Xin Jin from Baker Systems Engineering 439 at OSU*

- Understood the ways of data transmission between VR devices and computers by consulting literature
- Monitored and collected data by running five VR software from the computer with Wireshark
- Established and trained a prediction model using K-Nearest Neighbor (KNN) and Approximate Nearest Neighbor(ANN) algorithms with the sample data, achieving an accuracy of 70-80%

### Auxiliary loan methods for credit evaluation of loan personnel through XAI

Mar. 2023-Aug. 2023

*Supervised by Associate Professor Thomas Edward Bihari from Dreese Laboratories 113 at OSU*

- Understood the concepts of explainable AI (XAI) and related explainers such as LIME, SHAP.
- Explored the LIME explainer's source code and algorithm and learned to use LIME output to interpret the model and prediction
- Used bank loan data to build a model and used LIME and SHAP to explain the model

## PROJECTS

### Design a "Grader" Application and Management System

June 2023-Aug. 2023

- Established a database of students' information, application records, etc. based on OSU course catalog.
- Designed and implemented a simple and informative UI with good user experience using CSS
- Programmed with Ruby language to process students' submitted applications and approval result feedback
- Realized the data synchronization of various pages and modules by coding on Ruby on Rails

### Spotify Playlist Optimizer Design Based on Gurobi

Oct. 2022-Nov. 2022

- Invoked the API of Spotify to extract data on songs and scores of song's attributes and calculated mean and standard deviation of the scores
- Calculated the distance between song attributes and user-desired attributes and weighted attributes of different importance to determine desired songs for users
- Performed optimization analysis in Gurobi and created a new playlist by invoking the API of Spotify

### Parking Management System Design

Jan. 2022-May 2022

- Programmed the framework of the web program in PHP and implemented the functions of registering new events, calculating parking fees, and displaying available parking spaces
- Established a MySQL database and used the web program to operate it

### IGS Energy Battery Optimization

Jan. 2024-Mar 2024

- Use existing data and optimization methods to rationally allocate electricity usage and storage plans within a year to save money
- Use CVXPY to perform optimization calculations, analyze and fit the obtained optimization results, and obtain a new model. If the user inputs the current battery level and current time, the model can automatically arrange the charging and electricity consumption plan for the next hour

### Honda Indirect Procurement Analysis

Mar. 2024-May 2024

- By organizing the order records between Honda and various suppliers, we can organize Honda's ordering characteristics and provide suggestions for bulk ordering from a single supplier
- Create a network graph to visualize the relationship between Honda and its suppliers. And enable users to freely filter the desired information for visualization, while providing visualization of order volume comparisons between different suppliers and orders

