

# RICHARD CHARLES ROSS II

Software Engineer & Mechanical Engineer

Port Washington, WI 53074 | 262-355-6765 | rcharlesrossii@gmail.com

[linkedin.com/in/rcharlesrossii](https://www.linkedin.com/in/rcharlesrossii) | [github.com/rcharlesrossii](https://github.com/rcharlesrossii)

## TECHNICAL SKILLS

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**Languages** | Python, SQL, HTML, CSS

**Professional Certifications** | Computer Science, Data Science (Machine Learning)

**Proficiencies** | Pandas, Numpy, Matplotlib, Seaborn, Scikit-Learn, SciPy, Flask, Algorithms, Data Structures

**Developer Tools** | Docker, Git, GitHub, Jupyter Notebooks, Microsoft Visual Studio

## PROJECTS

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### Bayern Munich Twitter Bot

*Twitter bot live updating users on key events from Bayern Munich matches* Python | Visual Studio | GitHub Actions | LiveScore | Tweepy

- Sign up for Twitter developer to use its API and use the Tweepy module to invoke the Twitter API
- Collaborate with experienced web scraping developer to utilize a module that pulls soccer match information from livescore.com
- Communicate with web scraping developer to review functionality of his module and create desired features
- LiveScore module scrapes information from livescore.com to filter soccer match key events in a clean/usable way
- Iterate through LiveScore data and store key event information in a dictionary that will be used for tweeting respective events
- Each key event has its own Tweet template, allowing each Tweet to be unique following Tweepy's guidelines
- Utilizing GitHub Actions to automate tweets to be sent out live for all matches in Bayern Munich's schedule

### Discord Chat Bot

*Implementation of a chat bot in personal server on Discord*

Python | Visual Studio | JMusicBot | Weather API | Discord

- Sign up for Discord developer to use its API and use the Discord module to invoke the Discord API
- Implementation of bot to personal Discord server that interacts with user input in a human-like way
- Discord bot provides functional and practical answers to user input questions
- Accessing/updating dictionaries that contain the server members' basic and personal info so conversation is more personable
- Ability to provide helpful information like "What is the weather today?" or "When do the Milwaukee Bucks play next?"
- Implementation of music bot that searches and plays music via YouTube

### GDP and Life Expectancy Analysis

*Data analysis/visulation of 6 countries' GDP and life expectancy*

Python | Visual Studio | Git | Pandas | Seaborn

- Import data from the World Health Organization and the World Bank comparing countries' GDP and life expectancy
- Utilization of Pandas library to read and inspect CSV file data to prepare it for further visualization and investigation
- Plotting the data using the Seaborn library in a digestable way to view various trends
- Analysis of several plots showing how GDP and life expectancy changes over time by country

### Username & Password Creator

*Program that stores username and password after meeting requirements*

Python | Visual Studio | Git | Terminal I/O | GetPass

- Implementation of hidden characters using the getpass library, prompting the user to create a username and password
- User input in the command line, having the inputs meet specific requirements
- Once the user meets the requirements, the user's information is stored in a library and is a remembered user
- First project using Microsoft Visual Studio, setting up IDE & Python virtual environment
- Utilization of PEP8 style & Google docstring formatting

## EDUCATION

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**Codecademy** - Professional Certification, Data Science (Machine Learning)

2023

**Codecademy** - Professional Certification, Computer Science

2023

**University of Wisconsin-Milwaukee** - Bachelor of Science, Mechanical Engineering

2019