

(610) 757-7971  
Philadelphia, PA  
wangcharles.633@gmail.com

# Charles Wang

## West Chester University

charleswangprofessionalsite.com  
github.com/charles633-wcu  
linkedin.com/in/charles-zhou-wang

### EDUCATION

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**B.S Computer Science**, *West Chester University* | GPA: 3.85 Aug. 2024 — Present  
**Relevant Coursework**, *Data Structures & Algorithms, Data Science, Discrete Mathematics, Computer Systems*

### SKILLS

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<b>Programming</b>	Python, Java, JavaScript (ES6+), SQL
<b>Data Analytics</b>	Tableau, Power BI, Matplotlib, Data Visualization, ETL Pipelines, Pandas, SciPy
<b>Backend &amp; Web</b>	FastAPI, Bootstrap, Spring Boot, RESTful APIs, SQLite, SQLAlchemy, Microservices, Flask, Django
<b>Cloud &amp; DevOps</b>	AWS, Apache APISIX, Docker, CI/CD, Postman, Containerization
<b>Methodologies</b>	Agile/Scrum, SDLC, Git Version Control
<b>Artificial Intelligence</b>	Claude CLI, Claude Code, LangGraph, RAG Concepts, AI Assisted Workflow Methodologies

### PROJECTS

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#### **NFL Elo Dashboard** *nflelodashboard.com*

- Launched a live sports analytics dashboard that provides fans with automated, data-driven team rankings, simplifying complex NFL season statistics into easy-to-read performance trends.
- Computes and visualizes weekly Elo ratings from season game results, enabling team-level time-series performance tracking.
- Containerized the analytics service using Docker (custom Dockerfile, dependency isolation), deployed it on AWS EC2 behind an Apache APISIX API gateway, and hosted the frontend on Amazon S3 with CloudFront.
- Designed an interactive dashboard UI with chart visualizations, allowing users to explore season-wide performance trends.
- Implemented an ETL pipeline to ingest raw matchup data, normalize schemas, and persist clean season records into a SQLite database for reliable querying.

#### **Crime & Weather Visualization** *crimeweatherdashboard.com*

- Developed a full-stack interactive platform that uncovers environmental correlations in urban safety data, applying regression analysis to 20 years of NYC records to visualize the relationship between temperature and incident patterns.
- Implemented an ETL pipeline ingesting time-series data from the National Weather Service and NYC crime datasets, performing schema normalization and cleaning prior to storage.
- Architected a containerized, layered system separating frontend, backend services, and data storage, deployed on AWS EC2 with content distributed via CloudFront.
- Built an interactive JavaScript frontend allowing users to dynamically access backend services to explore trends and adjust regression analysis across selectable date ranges.

#### **Powerlifting Performance Analysis**

*kaggle.com/code/charles633/statistical-patterns-in-competitive-powerlifting*

- Analyzed large-scale competitive powerlifting data to evaluate performance differences by gender, bodyweight class, and lift type.
- Conducted hypothesis-driven statistical analysis using Welch's t-test and Welch's one-way ANOVA to assess differences in Wilks scores and total weight lifted across groups.
- Performed post-hoc Tukey HSD testing to confirm statistically significant differences in total weight lifted between all bodyweight classes.
- Modeled relationships between bodyweight and squat, bench press, and deadlift performance using Pearson correlation and linear regression, identifying lift-specific sensitivity to bodyweight changes.

### EXPERIENCE

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#### **Bartender & Server** *Teca*

**Jul. 2019 — Dec. 2023**  
*Newtown Square, PA*

#### **Patient Transport Volunteer** *Paoli Hospital*

**Jun. 2015 — Aug. 2023**  
*Paoli, PA*