

# Kelan Wu

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## PROFESSIONAL EXPERIENCE

### Software Developer 2

Paycom

January 2025 – Present  
Irving, TX

- Architected a **PHP** backend service that integrates with internal **.NET APIs** to enforce Canadian statutory vacation laws for **1,000+** businesses, scaling accurate timecard and payroll processing across **200,000+** employees.
- Accelerated generation speed of timecard reports by **80%** through **SQL** query optimizations, caching, and batch writes.
- Optimized memory consumption in long-running backend jobs by **70%** using **MySQL** streaming queries with **PHP** generators and chunked data retrieval techniques.
- Refactored a **React** SPA to reduce abandoned actions by **20%** by converting slow API requests into async pipelines.
- Developed a feature with **PHP/JavaScript** enabling users to add up to 25 out of 100+ custom fields to **15+** reports.
- Upgraded SPA component with **React/MySQL** to support filtering up to **2.6 million** archived timecard data entries.
- Implemented frontend updates with **React/TypeScript** and company internal UI libraries to time and attendance systems to ensure compliance with Washington lunch/break laws.

### Software Development Intern

Paycom

May 2024 – August 2024  
Irving, TX

- Engineered a full-stack report generator for **6,000+** employees enabling users to construct complex **SQL** queries without any technical knowledge.
- Developed a reusable cascading multi-select dropdown component using **React/TypeScript**, leveraged across **30%** of the application, built on Material-UI and company internal UI libraries.
- Centralized user filter management with **Redux**, reducing backend processing errors by **95%** and improving system stability.

### System Engineering Co-op

RoviSys

February 2024 – May 2024  
Houston, TX

- Developed a **Python** CLI tool with pandas, reducing system data conversion time by **95%** for companies upgrading their processes.
- Constructed **50+** system process diagrams for **10+** companies, increasing data analysis speed by **30%** with AVEVA PI.
- Utilized PI System Explorer to proficiently mapped 100+ tags, enabling efficient data organization within processes.

## PROJECTS

### Personal Finance Application | Python, TypeScript, React, Next.js, FastAPI, PostgreSQL, Electron.js

- Built a full stack personal finance application with **React/Electron/FastAPI** and **PostgreSQL**, enabling users to visualize and analyze their financial data across checking, investment, liabilities, and credit accounts.
- Developed a **FastAPI/Python** backend processing user uploaded CSVs and integrated OpenRouter LLM APIs to analyze financial data and provide personalized financial insights.

### NBA ROTY Predictive Model | Python, scikit-learn, pandas, numpy, matplotlib, beautiful soup

- Developed a script with **Python**, **pandas**, and **beautiful soup** to scrape 100+ webpages compiling 43 years of 3,200+ rookie NBA players' data in **2 minutes**.
- Designed a regression predictive model with a r2 score of **0.95** in forecasting rookie win share percentage.

## EDUCATION

### University of Houston

Bachelor of Science in Computer Science, Minor in Mathematics

Houston, Texas  
December 2024

- **Scholarships and Awards:** 2023 Summer Undergraduate Research Scholarship Recipient

- **Coursework:** Algorithms and Data Structures, Object Oriented Programming, Database Systems, Software Design, Software Engineering, Artificial Intelligence, Data Science, Machine Learning, Discrete Math, Networks

## TECHNICAL SKILLS

**Programming Languages:** Java, Python, JavaScript, TypeScript, PHP, C++, HTML, CSS, SQL, R

**Frameworks/Tools:** React, Redux, Express.js, Next.js, Flask, MySQL, PostgreSQL, MongoDB, Docker, Kubernetes, Git, Jira, Postman, Azure, Vite, RabbitMQ, Swagger

**Concepts:** Software Engineering, Agile, Full-Stack, Frontend, Backend, Containerization, Unit tests, MVC Architecture, CI/CD, Microservices, API Design, Background Jobs, SQL Optimization, Performance Optimizations, REST APIs