Aaron Guo

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Education

The George Washington University | BSc In Computer Science | Minor in Accountancy   **Expected June 2026**
Relevant Coursework: Data Structures & Algorithms, Database Management Systems (SQL), Applied Machine Learning (Regression, Classification), Statistical Methods

Publications

[1] *How does resource accumulation in League of Legends affect the outcome of the game?*, JSR 2022

Skills

- **Languages:** Python, R, SQL
- **Data Science & ML:** Pandas, NumPy, Scikit-Learn, PySpark, NLP, Time-Series Analysis
- **BI & Visualization:** Tableau, Power BI
- **AI & Cloud:** OpenAI/Gemini APIs, AWS (S3, EC2), Docker, Git
- **Languages:** English (Native), Mandarin (Fluent)

Work Experience

Sunwater Capital   **January 2025 – May 2025**
Data Science Intern   *North Bethesda, MD*
- Architected and deployed an end-to-end ETL pipeline using PySpark and SerpAPI to automate the extraction, cleaning and loading of legislative data, ensuring 99%+ data integrity and availability across the organization.
- Engineered an AI-powered verification module leveraging prompt engineering and the OpenAI API to perform entity recognition and validation on personnel data, reducing manual fact-checking time by 90%.
- Developed a robust web scraper using Python (Beautiful Soup, Requests) and the Firecrawl API to collect unstructured committee hearing transcripts; performed initial Natural Language Processing (NLP) to extract key topics for strategic analysis.
- Executed comprehensive data wrangling and Exploratory Data Analysis (EDA) in R (dplyr, tidyr) to transform raw web data into structured, analysis-ready datasets for downstream modeling and reporting.

China Fun Restaurants   **September 2020 – August 2024**
Data Analyst' 22-24, Assistant Manager 20-22   *Charlotte, NC*
- Conducted time-series analysis on historical sales data to forecast daily food usage, leading to a 14% reduction in waste and a 21% increase in profit margins.
- Developed interactive dashboards in Tableau and Power BI to visualize Key Performance Indicators (KPIs) such as item profitability, sales trends, and order volume for a 200+ item menu, enabling data-driven inventory and marketing decisions.
- Presented data-driven narratives and insights to stakeholders using Tableau, resulting in a 30% increase in engagement and the adoption of a new menu strategy that boosted profits by an additional 5%.
- Designed and managed a relational-style menu and inventory database within Excel using VLOOKUPs, pivot tables, and macros, streamlining order management for a team of 10+ staff.

Projects

Automated Social Media Content Pipeline (Contributor)   **Jan 2025 - Present**
(https://www.tiktok.com/@crazystorylord)(SC:https://github.com/aguo890/ImprovedVideoBot)
- Engineered a data pipeline to automate the transformation and deployment of video content and metadata to TikTok, Instagram, and YouTube, utilizing their respective REST APIs.
- Developed a Python-based API management module with a key-rotation system for the ElevenLabs TTS service, ensuring continuous operation and optimizing resource consumption under usage limits.
- Orchestrated the entire automated workflow using cron jobs and shell scripting within a Linux environment, establishing a hands-off, scheduled content delivery system.

Full-Stack Website using Amazon AWS, MySQL and Python Flask (Team Lead)   **December 2023 - May 2024**
(https://www.youtube.com/watch?v=TcF3sAtyHhM)
- Integrated and fine-tuned a Gemini API-powered AI chatbot to handle user queries, providing instant, context-aware responses and improving the user support experience.
- Architected and managed a MySQL relational database schema to handle complex application, user, and administrative data; wrote and optimized SQL queries to ensure data integrity and power front-end features.
- Led a team of 6 in developing the full-stack application using Python (Flask) on AWS, personally contributing over 400 commits and owning the backend logic and database integration.