WEI-CHIH HUANG

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EDUCATION

PhD in Physics, Texas A&M University, US — Aug. 2019 - Dec. 2025
BS in Physics, National Tsing Hua University, Taiwan — Aug. 2015 - Jun. 2019

EXPERIENCE

Data scientist internship - Capital One Auto Finance — Jun. 2025 - Aug. 2025

- Reduced 10% loss for auto loans with machine learning models (GBM, NN, LSTM) using PyTorch
- Achieved 99% prediction accuracy for future payments and default probability using time-series ML model
- Designed customized time series model, training loop and loss function to better aling with business needs
- Fetched 10 TB of data from SnowFlake and processed statistical data analysis on AWS
- Collaborated with 4 product managers to translate model outputs into action-based decisions

Quantitative Researcher/Engineer - Aggie Quant Fund — Jan. 2024 - Dec. 2024
Application of cutting-edge technologies to financial market

- Managed $100,000 fund and developed models for stock forecasting and portfolio optimization
- Outperformed S&P500 by 200% by AI, sentiment analysis, language model, and alpha research
- Saved 70% time by efficient, automatic and high-performance price database with InfluxDB
- With 0 costs extract market insight everyday from finance news with GitHub Actions and cloud LLM
- Collaborated in a 10-person team to optimize portfolio, mitigate risks and monitor trades

Research Assistant - Physics Department, Texas A&M University (researcher profile) — Aug. 2019 - Jun. 2025
PhD dissertation on high energy dark matter particle search

- Published 7 papers in high impact journals and presented successful talks at international conferences
- Analyzed 1B rows of multi-dimensional high energy particle data
- Accelerated the analysis by 1000 times with dedicated algorithm, multiprocessing, caching, and C++
- Save 95% time in data visualization by NumPy, SciPy, Pandas, and Matplotlib
- Arranged 20 TB memory and 3000 CPU cores in MPI/OpenMP computer cluster to complete particle simulation
- Reduced 90% of time on high energy particle simulation with machine learning models

Independent Data Science Researcher - Pro Cyclists Race Analysis (Github repo) — Apr. 2022 - May. 2024
Data analysis of professional sports and forecast using machine learning models

- Processed and analyzed 12M rows of data with NumPy, Pandas, SciPy, scikit-learn, and PySpark
- Achieved 90% prediction accuracy using machine learning models with PyTorch and sciki-learn
- Saved 80% cloud bill by deploying data and model to Runpod
- Increased 500% web scraping performance with multi-threading BeautifulSoup

CERTIFICATIONS

- Fundamentals of Accelerated Computing with CUDA C/C++
- Machine Learning Foundations: Algorithmic Foundations
- Machine Learning Foundations: Mathematical Foundations
- Machine Learning Techniques
- Divide and Conquer, Sorting and Searching, and Randomized Algorithms
- A Crash Course in Causality: Inferring Causal Effects from Observational Data