Wyatt Walsh

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Education 🎓

BS | Industrial Engineering and Operations Research   **UC Berkeley** | August 2021

High School Diploma   **The Hotchkiss School** | May 2014

Experience 💻

Senior Software Engineer   **Stealth NFT DeFi DAO** | March 2022 - July 2022
- Managed UI (front-end) operations, implementation, validation, and deployment and supported two junior devs.
- Used Jira for agile project management and Notion to ensure maximally synergetic support of junior developers.
- Technologies included: React, NextJS, Redux, Cypress, Jest, StorybookJS, ethers.js, Typescript, SCSS.

Founder, CTO   **SandLabs** | June 2021 - March 2022
- Built a NextJS web app including landing page, blog, and other content to host the project online
- Successfully secured Web3 grant funding from the Ocean Protocol to conduct a Reddit Web3 Content data scrape.
- Partnered with two Duke University cofounders to further explore entrepreneurship in the Web3 space.
- Tools and skills included: Python, web data scraping, API usage, Solidity for smart contracts, React, Typescript.

Demand Forecasting   **Gap Inc.** | January 2020 - May 2020
- Using data science and analytics, proposed a forecast correction system that improved demand forecasts by 5%-25%.
- Extracted 5+ years of time series forecast data using MySQL and quickly processed using Apache Spark (PySpark).
- Technologies included: Python, Jupyter Notebooks, data visualization (matplotlib), distributed computing.

Course Staff for Data 8: Foundations of Data Science   **UC Berkeley** | January 2019 - December 2019
- Fostered student development as a course staff tutor for the largest in-person data science course of 1600+ students.
- Invigorated student interests with 75+ lectures on varying topics in statistics, programming , and analytics.
- Hosted office hours, proctored exams, graded assignments, crafted lesson plans, and collaborated with other staff.

Personal Projects 📂

Private High Frequency Algorithmic Cryptocurrency Trader
- Deploy developed trading algorithms to solve the portfolio optimization problem for cryptos using open-source frameworks.
- Deep learning methodologies utilized for forecasting and quasi-quantum algorithms used for portfolio optimization.
- Technologies include: Docker, AWS, Python, Jupyter Notebooks, FreqTrade, SciPy, Tensorflow, Pytorch, Pandas.

Comprehensive NBA SQL Database from Scratch   k kaggle.com/wyattowalsh/basketball
- Created robust database of NBA data that updated daily and included box scores since the first match in 1946 to present day.
- Ensured Leveraged open-source technologies to ensure $0 budget for delivery of all necessary features (updating daily)
- Created data pipeline with containerized Python scripts and ensured validity by utilizing Pandera data validation.

Machine Learning for NBA Game Attendance Prediction   ⬡ github.com/wyattowalsh/NBA-attendance-prediction
- Optimized NBA stadium stakeholder's decision making by building a Python-based game attendance prediction tool.
- Engaged with an end-to-end machine learning modeling lifecycle ranging from data collection to model performance analysis.
- Refined modeling with 10+ regression experiments resulting in a best error of 5% average stadium capacity.

Regularized Linear Regression Deep Dive   ⬡ github.com/wyattowalsh/regularized-regression-from-scratch
- Published 3 articles in *Towards Data Science* after a thorough investigation into underlying model optimization mathematics
- Open-sourced all project implementations, including Pathwise Coordinate Descent optimization and cross-validation

Technical Skills </>

Programming Languages ⌨   Python, SQL, R, Java, Matlab, HTML, CSS, Javascript, Typescript

Data 🔗	**Collection** ▦	**Visualization** 📈	**Processing** 🎛	**Modeling** 📈	**Deployment** ✈
	• Web scraping	• Reporting	• Pandas	• ML	• MLOps
	• APIs (REST)	• Dashboards	• Spark	• NLP / CV	• Data Orchestration
	• Databases	• Data Plotting	• Multiprocessing	• Forecasting	• Flask/FastAPI
	• Airflow	• Matplotlib	• Kubernetes	• Simulation	• Cloud Platforms
		• D3.js			

Cloud Technologies ☁   Platforms (AWS, GCP, Azure), CI/CD (GH Actions, Travis CI), GitHub, DagsHub

Workflow ⑂   Git, Linux, Shell Scripting, Virtual Environments, Virtual Machines, Jupyter Notebooks, Docker, Kubernetes, Testing

Optimization Tools 🛠   AMPL, IBM CPLEX, Gurobi, PuLP, Metaheuristics, Reinforcement Learning

Miscellaneous 💼   3D CAD Modeling (Autodesk & Solidworks), Microsoft Office Suite, Advanced Typesetting, Web Development

Certificates ✹

- IBM Data Science Professional Certificate   **IBM** | 02-2021

Publications 📖

Towards Data Science
- Basics of Linear Regression Modeling and Ordinary Least Squares (OLS)
- Using Ridge Regression to Overcome Drawbacks of Ordinary Least Squares (OLS)
- Implementing Pathwise Coordinate Descent For The Lasso and The Elastic Net In Python Using NumPy