William Cheung

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SUMMARY

Senior Data Scientist with 5+ years of experience leading machine learning initiatives, experimentation frameworks, and large-scale data solutions in the digital advertising and media industries. Proven ability to drive business impact through A/B testing, algorithm optimization, and cross-functional collaboration with product, engineering, and analytics teams. Passionate about building data-driven strategies that enhance product performance, operational efficiency, and client success.

EXPERIENCE

Goodway Group; New York, N.Y.

April 2023 – Present

Senior Data Scientist

• Lead the improvement and further **development of media buying algorithms** focusing on pricing and volume control. Benchmarked media buying algorithms against Trade Desk Koa, achieving a 23% reduction in CPM without significant impact on CPA.

• Build internal **Marketing Mix Modeling tools as well as a Scenario Modeling** feature extension using open-source packages and facilitate model storage through MLflow. This lead to a 17-53% increase in ROAS for various clients.

• Collaborated with product, engineering, and client teams to **deploy internal web applications** for stakeholders with Streamlit (e.g. A/B framework app, Brand assessment app, Daido chatbot, etc.), with up to 45% usage rate among client teams.

• Create **processes for internal A/B testing** for both back-end optimization and guide the analytics teams on launching client-side tests.

Criteo; New York, N.Y.

Data Scientist

- Built self-service reporting and performance insights into online video advertising campaigns (OLV and OTT) in order to help **grow client spend ~300% year over year** on upper funnel and full funnel tactics
- Supported backend data pipelines and data migration, with dataflow job, and warehouse management for tasks such as **audience targeting**, complex **custom reporting**, and **supply data to other teams** for their analytics
- Reviewed code submissions on various database or automated tooling alterations
- Built A/B testing infrastructure, joining internal processes with a newly acquired platform (IponWeb) to allow internal teams to conduct A/B tests
- Used Natural Language Processing to classify app inventory type and allow for better reporting and training data for bidding engine

Fordham University; New York, N.Y

Graduate Researcher (Machine Learning)

• Main Project - Using passive biometrics to continuously certify a user with multiple devices (*Implicit* continuous biometric authentication model using IoT wearables) Initially testing with classical models (RF, KNN, SVM, NB) to artificial neural networks (CNN,RNN,CRNN) we've made a user authentication modeled

May 2021 – April 2023

September 2019 – May 2021

for internet connected devices taking into account Heart Rate, Gait, and Breathing with accuracy of 97%. For implementation I've **built a full-stack system incorporating a custom Fitbit application front end to a computational back-end android app with server interaction** [JavaScript: Fitbit and server, java: android app, python: feature computation and model decision generation] of the authentication model

• Secondary Project – User Location Prediction in Absence of GPS (Point of Interest identification) study using machine learning with 95% accuracy

National Grid; Brooklyn, N.Y

June 2016 – September 2019

Financial Analyst

- Automated system batch entries using VBA and SAP to **reduce manual entries by 15%** and speed up the monthly accounting process by an additional work day
- Analyzed financial information during month end close for the National Grid subsidiary, Narragansett Electric Company and work with business partners to accurately establish cost capture methods for recovery of over \$10 billion

EDUCATION

Fordham University (N.Y., N.Y.) M.S in Data Science (GPA: 4.0)

Stony Brook University (Stony Brook, N.Y.)

B.S. in Applied Mathematics and Economics [Double Major] (GPA: 3.6)

Technical Skills

• Programming & Scripting: Python (Pandas, NumPy, Scikit-learn, TensorFlow), SQL, R, Bash

- Machine Learning & Experimentation: A/B Testing, Regression, Classification, NLP, Recommendation Systems, Time Series Forecasting, MLflow
- Big Data & Cloud Technologies: AWS, Google Cloud Platform, Presto
- Development & Automation: Git, Airflow, REST APIs
- Visualization & Tools: Streamlit, Tableau

PUBLICATIONS

- Cheung, W and Vhaduri, S "Continuous Authentication of Wearable Device Users from Heart Rate, Gait, and Breathing Data" IEEE RAS/EMBS International Conference on Biomedical Robotics & Biomechatronics <u>https://arxiv.org/abs/2008.10779</u>
- Cheung, W and Vhaduri, S "Context-Dependent Implicit Authentication for Wearable Device User" IEEE International Symposium on Personal, Indoor and Mobile Radio Communications <u>https://arxiv.org/abs/2008.12145</u>

Graduated - Dec. 2020

Graduated - May 2016