William Cheung

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ABOUT ME

I was named after the town I was born in: Williamsburg VA. My journey began in mathematics, which branched into finance, computer science, and data science. My passion is in improving education and empowering people for their future. In my free time I enjoy cooking, art/architecture, and watching the NBA.

EDUCATION

Fordham University; N.Y., N.Y.
Expected Graduation: Feb. 2021
M.S in Data Science (GPA: 3.98)
Thesis: Multi-modal User Authentication Using Biometrics

TECHNICAL SKILLS

Programming: Python (pandas, matplotlib, sci-kit learn, TensorFlow, request, re, etc.), Java (android programming, etc.), JavaScript, R, VBA, BI, Hadoop, Spark, SQL
ML Knowledge: Regression, Classification, Transfer Learning, Deep Learning, Natural Language Processing, Machine Learning; Big Data Programing, Cloud Computing, Data Mining, Statistics and Probability, Algorithms
Misc.: MS suite, English, Cantonese, SOA Exam P passed Jan 2014

VOLUNTEER

National Grid Financial Outreach; Brooklyn, N.Y
Sept. 2018 – Jan. 2020
FOUNDER OF STUDY BUDDIES PROGRAM; Brooklyn, N.Y
June 2010 – August 2012

EXPERIENCE

Fordham University; New York, N.Y September 2019 – Present
Graduate Research Assistant

- Developing an implicit continuous biometric authentication model using IoT wearables with supervised (RF, KNN, SVM, NB) models with 98% F_1-score.
- Build 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] of the authentication model
- Use TensorFlow to build deep neural networks (CNN, RNN, CRNN) for person recognition with breathing audio up to 92% accuracy.
- Conducted a point of Interest identification study on students from the Duke college campus using machine learning with 95% accuracy.
- Mentor an undergraduate in machine learning research in person authentication using heart rate and saturation O_2 levels.

National Grid; Brooklyn, N.Y June 2016 – January 2020
Financial Analyst

- Automate 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.
- Analyze 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.
- Close 8 audits with outside auditors (PWC/Deloitte) and energy regulators (State and Federal) to submit official financials.

Mercer; Wan chai, Hong Kong June 2015 – August 2015
Employee Health and Benefits Regional Team Intern

- Updated pricing tool with a GUI to make it user friendly while preventing tampering of the source code using VBA.
- Assist in industry employee benefits bench-marking: based on industry data and company culture rate and alter client company's benefit plans.
- Medical deep dive analysis: analysis of medical data to optimize employee incentive programs.

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 (November 2020) *https://arxiv.org/abs/2008.10779*
- Cheung, W and Vhaduri, S "Context-Dependent Implicit Authentication for Wearable Device User" IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (September 2020) *https://arxiv.org/abs/2008.12145*
- Cheung, W and Vhaduri, S "Bag of On-Phone DNNs to Secure IoT Wearables Real-Time Using Wearable and Smartphone Data Fusion" (pending)
- Cheung, W and Vhaduri, S "Time- and Activity-Driven Biometric Patterns to Discover Places of Importance (POI)" (pending)