Nathan Hittesdorf

nathanmhitt@gmail.com | https://www.linkedin.com/in/nathan-hittesdorf-4b1352189/
721 S. Carpenter St. Chicago, IL 60607

Education

B.S. / M.S. in Computer Science Expected 12/25
University of Illinois at Chicago - College of Engineering
Relevant Coursework: Data Structures (C++), Machine Learning, Programming Language Design, Software Engineering, Advanced Algorithm Design, Distributed Systems and Cloud Computing, Investments, Options and Futures Markets

Experience

Data Science AI/ML Group Intern: CME Group 12/22 - Present
- Spearheaded a comprehensive design and implementation process of a Python-based anomaly detection system for yield curve data for CME Clearing's financial modeling applications, employing advanced machine learning techniques. Devised and implemented a unique data engineering method, creating synthetic outliers to enhance model training.
- Developed machine learning models, notably XGBoost and Convolutional Neural Networks via PyTorch, for novel outlier detection and prediction.
- Designed and implemented foundational data engineering architecture for a department-wide marketing and analytics initiative. Played a pivotal role in launching the initiative, which resulted in substantial new revenue generation during the 3-month pre-launch phase.
- Developed a Google BigQuery SQL application that enables users to holistically measure market microstructure. Achieved over 80% time savings and reduced costs by 30% compared to Python-based implementation. Collaborated with stakeholders and business users to refine requirements and presented actionable insights based on the results.

Machine Learning Engineer: University of Illinois Chicago, Biostatistics Department 05/22 - 08/22
- Utilized Numpy and Pandas to clean, transform, and analyze electronic medical records and Chicago Atlas data.
- Employed Logistic Regression, Elastic Net Regression, Random Forest, and XGBoost libraries to develop and evaluate machine learning. models that predict the likelihood of perinatal depression from the subject's medical history, socioeconomic, and environmental factors.
- Applied SHAP analysis to assess features and improve model AUROC.
- Developed a Multilayer Perceptron Model utilizing TensorFlow and KerasTuner libraries to increase model performance by over 15% percent.

Web Development Engineer: Pupil 12/21 - 03/22
- Developed React, ReactNative, and Typescript code to create responsive front-end components for Pupil's user interface.
- Developed Express JS and Firebase code to create data pipelines between Pupil's databases and user interface.

iOS App Developer: Apple / Everyone Can Code 10/21 - 12/21
- Worked in a team to develop and launch an app called SeeGreen, a virtual plant growing app integrated with augmented reality features, to the Apple App Store.
- Utilized the Swift programming language and MVC design patterns, CoreData, and Firebase to implement local and cloud storage functionality.
- Collaborated with Apple engineers to work through technical problems impacting our group.

iOS App Developer: Everyone Can Code 06/21 - 08/21
- Developed an iOS application called EthGuide to teach youth about cryptocurrency and decentralized finance.
- Implemented Swift API call functionality to process real-time crypto price data and display it within the app.
- Utilized the SwiftWeb3 library to create a rudimentary in-app crypto wallet.

Leadership & Activities

Coding Instructor: BUILD INC. Everyone Can Code Chicago 06/22 - 08/22
- Taught the Swift programming language, including basic programming concepts all the way through API calls and database interactions, to high school students throughout Chicago.
- Mentored students through iOS the app development process to create fully functional iOS applications, including working with Apple engineers.