

JONATHAN FAN

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| EDUCATION | YALE UNIVERSITY Department of Mathematics Bachelor of Science, May 2027 <ul style="list-style-type: none">• Emphasis in Economics, Mathematics, Statistics, and Data Science• Coursework: Linear Algebra, Probability Theory• Clubs: Yale Alternative Investments, Yale Student Quantitative Research Group, Yale Christian Union• GPA: N/A | New Haven, CT |
| | UNIVERSITY OF IOWA College of Liberal Arts and Sciences Non-degree High School Student, May 2023 <ul style="list-style-type: none">• Coursework: Calculus III, Discrete Structures, Introduction to Linear Algebra, Introduction to Numerical Methods: Analysis and Computation• GPA: 4.00/4.00 | Iowa City, IA |
| PROJECT 2023-Present | AlgoFacto Hedge Fund Project Creator <ul style="list-style-type: none">• Created a python package that allows users to efficiently craft alpha factor gradient-boosted ML models, whether that means designing factors, predicting future returns, tuning hyperparameters, or optimizing portfolio weights• Designed and Replicated 500+ factors (i.e., macro, value, momentum, etc.) via multi-factor dynamic regression models, PCA eigen-loadings, Cross-sectional K-means clustering, etc.• Devised 6 profitable trading strategies (robust out-of-sample testing and stress tests), with a focus in ML-Based, Factor-Based, Smart-Beta, Statistical Arbitrage, and Trend-Following Strategies• Coded fully-automated live-trading executional system using IBKR API and striving to run a strategic asset allocation portfolio of 10-15 profitable strategies live in the upcoming 6 months (\$10K Capital) | New Haven, CT |
| EXPERIENCE 2023-Present | YALE SCHOOL OF MANAGEMENT Research Assistant <ul style="list-style-type: none">• Programming LLMs and RAG to process thousands of self-trained word embeddings (i.e., NYT, WSJ, etc.) to generate novel Uncertainty Indices correlated with the Economic Policy Uncertainty Index (EPU). Researching under Professor Yinan Su's and Professor Leland Bybee's guidance.• Published an ongoing paper with Professor Leland Bybee as a contributor. Created a working repo to replicate Bubbles for Fama (Greenwood et al.) and industry portfolios from Kenneth French's Data Library. | New Haven, CT |
| 2020-2022 | UNIVERSITY OF IOWA COLLEGE OF NURSING Lead Algorithm Researcher <ul style="list-style-type: none">• Published paper on using deep learning to effectively identify and extract symptom information from electronic health records (EHR) to allow physicians to automatically analyze any given EHR• Led a team of 5 with Dr. Gilbertson-White to develop a system and run computer simulations using PyTorch, Tensorflow, Keras, and Python | Iowa City, IA |
| 2022-2022 | YALE UNIVERSITY Research Assistant <ul style="list-style-type: none">• Published paper under Professor Dragomir Radev's mentorship and his LILY Lab team to create FOLIO (First Order Logic) Dataset• Assisted in data creation process by writing 20 First-Order-Logic & English stories for dataset, analyzed 180 natural language data structures, and devised conclusions from 75 premises in human performance task | New Haven, CT |
| 2021-2022 | UNIVERSITY OF IOWA COLLEGE OF ENGINEERING Secondary Student Training Program <ul style="list-style-type: none">• Crawled twitter data relating to recent tweets regarding the Supreme Court's Decision on overturning Roe vs. Wade using a Search API to analyze human reaction to the decision• Developed a deep learning model to predict geo locations of where certain tweets came from and ran a sentiment analysis on the texts using the RoBERTa-model | Iowa City, IA |
| 2020-2020 | NATIONAL ADVANCED DRIVING SIMULATION Data Analyst Intern <ul style="list-style-type: none">• Coded a Batch-Processing method using Python to preprocess and clean unstructured eye-tracking pixel data to determine areas drivers frequently viewed (e.g., phone, road, surrounding areas, etc.)• Visualized data through graphs that contained quadrants to separate x-y pixel points and processed survey data and used SmartReader (AI Survey Machine) to analyze responses | Iowa City, IA |
| SKILLS | <ul style="list-style-type: none">• Fluent in Python, Ray, Pandas, Numpy, Tensorflow, Keras, PyTorch, Optuna, Scikit-Learn, HTML, CSS, LightGBM, XGBoost, CatBoost, SQL, Asyncio | |

- Adequate knowledge in machine learning, data visualization, and statistical analysis