# Sean Wiryadi

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## Education

**Columbia University** **New York, NY**
*M.S. in Business Analytics,* ***GPA: 3.92*** *Aug 2024 - Expected Aug 2025*
**Relevant Coursework:** Data Analytics, Business Analytics, Marketing Analytics, Cloud Analytics, Data Driven Dollars, Data Driven Finance Methods, AI Applications in Finance, Derivatives, Asset Management, and Probability & Simulation

**New York University** **New York, NY**
*B.S. in Data Science,* ***GPA: 3.71 Dean's List*** *Sep 2021 - May 2024*
**Relevant Coursework:** Data Structures, Advanced Machine Learning, Causal Inference, Data Management & Analysis, Natural Language Processing, Linear Algebra, Probability & Statistics, Responsible Data Science and Deep learning.

## Professional Experience

**Columbia University** **New York, NY**
*Teaching Assistant* *Jan 2025 - Present*
- Serve as a Teaching Assistant for two graduate-level courses: **IEOR 4404: Simulation** and **STATS G5293: Generative AI using LLMs**.
- Oversee 150 students, providing academic support and evaluating assignments, exams, and projects.
- Hold weekly office hours to offer individualized guidance and clarify course concepts.

**Quarre Real Estate** **New York, NY**
*Data Scientist Intern* *May 2025 - Present*
- Developed a pipeline to automatically retrieve and parse court documents, extracting summaries and identifying relevant cases.
- Designed LLM prompts to summarize filings, assess real estate relevance, and extract structured data for ingestion.
- Integration with an in-house LLM to power fast information retrieval and client targeting.

**Klinik Pintar** **Jakarta, Indonesia**
*Data Scientist Intern* *Jun 2023 - Aug 2023*
- Processed millions of patient records by implementing **SQL joins** and **data cleaning** techniques to construct a refined dataset.
- Performed in-depth data analysis, making reports detailing **patient visits**, **disease trends**, **medicine usage**, and other metrics.
- Created a time-series forecasting model **(LSTM)** in a team of **four**, optimizing inventory efficiency $\approx 10\%$, eliminating stockouts.

**Verdhana Sekuritas** **Jakarta, Indonesia**
*Research Intern* *Jun 2022 - Aug 2022*
- Conducted market research and analysis on Indonesia's mining and fossil fuel sectors, identifying key investment opportunities.
- Advised on long and short equity positions, contributing to a **5% increase** in returns.
- Generated monthly client reports by preparing market assessments and competitors analysis.

## Personal Projects

**Group Task: Automatic Piano Music Transcription (mp3 to sheet music)** **Mar 2024 – May 2024**
- Developed a deep-learning model with **Pytorch** to transcribe piano music using **Deep Neural Networks (DNN)**.
- Preprocessed data using **Constant-Q Transform (CQT)** and **normalized data**.
- Applied regularization techniques to prevent overfitting such as **Dropout** and **early stopping**.
- Attained **40% accuracy** with DNN, approaching industry standard of **56%**.

**Natural Language Processing - Information Retrieval** **Mar 2024 – May 2024**
- Enhanced information retrieval from unstructured text, leveraging NLP techniques: **Stop Word Removal**, **TFIDF**, **Cosine Similarity**, **Lemmatization**, and **Normalization**.
- Evaluated a Hugging Face dataset, achieving **59.40% accuracy**, **18.18% recall**, **71.43% precision**, and **F1-Score of 28.99%**.

**Automated High-Demand Purchase & Reservation System** **Aug 2023 – Dec 2024**
- Developed automation software to secure **high-demand restaurant reservations**, **limited-edition sneakers**, and **concert tickets** from Resy, OpenTable, and other purchase platforms.
- Achieved over **1,000 successful checkouts** and **100 reservations** in the first **3 months**, generating over **$100K in revenue**.
- Engineered systems with **multi-threading**, **proxy rotation**, **captcha bypass**, and **real-time alerts** via Discord and Telegram.

## Publications

**Pairs Trading Optimization** **Oct 2024 – Dec 2024**
- Created a quantitative model to optimize pairs trading strategy by selecting **mean-reverting pairs using cointegration tests**.
- Implemented the **Ornstein-Uhlenbeck process** to model price dynamics.
- Utilized a **rolling window approach** to update statistical parameters (mean & standard deviation) for signal generation.
- Backtested using historical market data, **7.21% return for the naive model** compared to **4.92% for the OU model**.

## Technical Skills

**Programming Languages**: Python, Scala, PySpark, HTML, Java, JavaScript, CSS, C++, R, SQL, LaTeX
**Frameworks and Libraries**: React, NodeJS, Flask, PyTorch, TensorFlow, Scikit-Learn, BeautifulSoup, Requests, Pandas, Numpy
**Tools and Platforms**: Hadoop, BigQuery, Snowflake, MongoDB, AWS, GCP, Tableau, Excel, Canva, Figma
**Languages**: Mandarin Chinese (Fluent) & Bahasa Indonesia (Native)