

Chenyu (Fred) Zhang

(667) 213-8216 | zhangchenyu555@gmail.com | <https://fredzcy.github.io> | New York, NY

WORK EXPERIENCE

Data Scientist | Morgan Stanley

New York, USA | Feb 2023 – Present

- Designed and deployed **multiple AI applications** (e.g., RAG-based chatbot, **agentic** NL2SQL system, market news recommender, document and flowchart generators), integrating data sources (Snowflake, PostgreSQL, Redis) and LLMs.
- Implemented core **GenAI pipelines** (data ingestion, chunking and embedding strategies, retrieval and ranking architecture, context engineering, evaluation, UI integration, and deployment), following **LLMOps and model-risk best practices**, enabling adoption by **700+** users and driving significant efficiency gains.
- Developed **LLM-powered text classification models** detecting **10+** compliance violations across **32,000+** client interaction records, improving coverage and consistency of supervisory reviews.
- Designed **keyword-assisted topic modeling and NLP pipelines** over **9,000+** issues to identify emerging themes, supporting scalable, data-driven analysis and executive-level reporting.
- Built an **embedding-based similarity and validation framework** to assess data consistency and control effectiveness, identifying gaps in **24.1%** of controls and informing risk assessment and evaluation priorities.
- Drove **AI adoption** through hands-on training, demos, technical documentation, and **8** technical presentations on NLP, Explainable AI, and LLMs, supporting rollout across **10+ teams** and accelerating trust in AI-assisted workflows.
- Mentored **5** interns on GenAI projects powered by open-source LLMs, resulting in **3** production-ready tools.

Data Science Summer Intern | Morgan Stanley

New York, USA | Jun 2022 – Aug 2022

- Built a **neural-network-based recommendation system** to deliver personalized dashboard suggestions for **700+** users across **100+** dashboards, increasing engagement.
- Implemented a **multimodal transformer model** with multiple data augmentation techniques to classify **23,000+** company issues with **92%** accuracy, streamlining quarterly issue tagging processes.
- Partnered with analysts on a research project exploring risks in **electronic trading systems** and delivered actionable insights and recommendations to senior stakeholders, influencing risk management strategies.

Research Assistant | Johns Hopkins University (in collaboration with IEEE)

Baltimore, USA | Mar 2022 – Oct 2022

- Automated data retrieval and normalization for **700M+** IEEE publication records using APIs (e.g., MediaWiki, Geopy, ROR), supporting large-scale affiliation analysis.
- Achieved **89%** accuracy in affiliation disambiguation via **hierarchical clustering** based on cosine similarity and geographical distance, improving pipeline efficiency by **~90%** via multiprocessing.

Research Assistant | Xiamen University

Xiamen, China | Sep 2020 – Jan 2021

- Created a human action dataset with **1,000+** videos and improved concentration analysis accuracy by **20%** using **pose estimation models** (e.g., OpenPose, AlphaPose), supporting educational behavior analysis.
- Proposed student concentration improvement strategies, achieving **80%** adoption in pilot educational programs.

EDUCATION

Johns Hopkins University | Baltimore, MD

M.S.E. in Data Science | GPA: 3.73/4.0 | Dec 2022

Xiamen University | Sepang, Malaysia

B.E. in Computer Science and Technology (Honors) | GPA: 3.89/4.0 (Ranked 1/61) | Aug 2021

SKILLS

Programming Languages: Python, SQL, R, C/C++, JavaScript, HTML

GenAI & Agentic AI: RAG (Graph RAG), LangChain, LangGraph, LlamaIndex, OpenAI Agent SDK, FastMCP, Scale AI

ML/Data/Application Frameworks: NumPy, Pandas, Scikit-learn, TensorFlow, Keras, PyTorch; Flask, FastAPI, Gradio

Cloud, Infrastructure & DevOps: AWS, Azure; Docker, Kubernetes, Kafka; CI/CD (Jenkins), Git, Linux, CUDA, Grafana

Databases & Big Data: PostgreSQL, DB2, Snowflake, Redis, Neo4j, Spark, Hadoop

Certifications: Chartered Financial Analyst (CFA) Level I

Languages: English (Fluent), Mandarin (Native)