

# Ching Chao

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## PROFILE

Portfolio Manager, Proprietary Trader, AI Researcher

- Product Knowledge: Deep experience in Credit, Rates, FX, Equity, and Derivatives.
- Investment Strategy: Global Macro Relative Value, Credit Arbitrage, Capital Structure Arbitrage.
- Education: Financial mathematics degrees from MIT and Stanford University. AI degree from MBZUAI.
- International Experience: Tokyo, Hong Kong, Singapore, New York, London, Paris, Abu Dhabi.
- Nationality and Passports: USA, UK.
- LLM Foundations and Theory: Proficiency in transformer architectures, diverse tuning methodologies, scalable training frameworks, and alignment techniques, supported by both theoretical insight and hands-on implementation.
- AI Agents and Agentic Workflows: Built modular systems with LangGraph, using LLM control strategies to orchestrate multi-step reasoning, tool use, RAG, and structured memory for iterative, state-aware reasoning.
- Applied Category Theory: Applied functors, monoidal composition, and natural transformations to formalize compositional reasoning and structured generalization in neural architectures, with applications to latent program synthesis and out-of-distribution extrapolation.

## EDUCATION

### Mohamed bin Zayed University of Artificial Intelligence, MBZUAI

2025

World's first graduate-level AI university. Full MBZUAI scholarship.

Masters in Natural Language Processing | Dissertation: *On Why Form Shapes Reason* — investigated how category-theoretic structures can formalize and enhance compositional reasoning in neural language models.

### Ecole 42

A private, selective computer science school founded by French telecom entrepreneur Xavier Niel to promote innovative, peer-driven technical education.

### **Stanford University**

2003

Masters in Financial Mathematics

### **Waseda University**

1994

MBA, Recipient of MIT Japan Science, Technology, Management Scholarship

### **Massachusetts Institute of Technology**

1989

Bachelor of Science, Finance

## EXPERIENCE

### **Core42, G42 Company, United Arab Emirates**

2024

Developed an AI solution for a sovereign wealth fund, leveraging LLMs, RAG, and agentic workflows to support domain-specific reasoning and decision support in fixed income research, including macro analysis, credit monitoring, and investment workflows.

### **Hellebore Capital, Paris**

2021-2022

Credit hedge fund founded by the proprietary trading team at Natixis.

### **Chao Family Office**

2016-Present

Investment Management: Developing and implementing investment strategies, asset allocation, portfolio construction, execution, performance monitoring, and risk management.

**LetterOne Group, London**

2013-2015

LetterOne is a \$16 billion investment vehicle, with mandate to invest in wide range of instruments and strategies. As one of the key portfolio manager, my primary focus was targeting global macro strategies, within fixed income, credit, and foreign exchange markets, with risk limits and parameters set by the Investment Risk Committee. Profitable under mandated strategy.

**Natixis, London**

2007-2012

Credit Proprietary Trading: both systematic and relative value strategies in investment grade and high yield in North America and European credit markets. Strategies: credit index arbitrage, long/short cds portfolio, cash bond versus cds basis, cds curves and butterfly, conditional correlation via options. Profitable every year, with best years in 2009, 2010.

**Apogee Fund Ltd, New York**

2005-2006

Capital Structure Arbitrage: Portfolio manager with mandate to trade capital structure arbitrage, both investment grade and high yield. Event-Driven strategies: covenant review, cashflow generation, leverage, liquidity, amortization schedule, priority in capital structure, capital expenditure requirement, LBO risk, primary issuance.

**KBC Alternative Investment Management, New York**

2003-2004

Capital Structure Arbitrage: DE Shaw spin-off, established to focus on convertibles and credit arbitrage. Quant trader responsible for trade development, selection, execution, and day-to-day management for the capital structure arbitrage fund. Strategies: Credit vs Equity Volatility, Credit Curve, Volatility Term Structure, Credit Basis, Credit Optionality.

**JP Morgan Chase, Chemical Bank, Tokyo, Hong Kong, Singapore**

1995-2000

Rates Trading: Relative value trading in swaps and options, in G7 and local asian currencies. Strategies: Forward-Forward Curve and Volatility plus Turns, Conditional Correlation, Volatility Skew, Basis. IRS, Swap Spread, Caps/Floors, Swaptions, Cross Currency Swaps, FX Swap, Futures.

**Morgan Stanley, Tokyo**

1994-1995

Fixed Income Derivatives: Derivative Products Group was the most profitable group within Morgan Stanley, generating revenues exceeding a billion dollars.

**Salomon Brothers, Tokyo**

1991-1994

Equity Derivatives: Salomon Brothers was a forerunner in establishing highly profitable Nikkei index cash and carry arbitrage in Japanese markets.

**TECH SKILLS****Large Language Model (LLM):**

Hugging Face, LangChain, OpenAI, Transformer, BERT, Embedding, PEFT, QLoRA, CrewAI, AutoGen, LangGraph, LangSmith, Retrieval Augmented Generation (RAG), DSPy, LLM Routers, Causality, AI Agents.

**Machine Learning:**

Julia, Turing, Jax, PyTorch, TensorFlow Probability, Pyro, Numpyro, Scipy, Numpy, Pandas, Weights & Biases.

**Crypto, DeFi, Web3, Blockchain:**

QuantConnect, Solidity, Remix, Metamask, Truffle, Ganache, Openzeppelin, Brownie, Hardhat, Etherscan, Alchemy, Infura, Web3js, Ethersjs, Chainlink, Dune, Zero Knowledge.

**Coding:**

C, Python, Poetry, Pyenv, Scalene, Dart, Unix, SQL, Flutter, Firebase, Docker, Github, Streamlit, Gradio, FastAPI, Google Cloud, Lightning Studio.