

# Roy Ma

## Machine Learning Engineer

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Machine Learning Engineer with 4+ YoE in engineering, delivering, and deploying AI solutions in Python. Strong foundation in Machine Learning, Deep Learning, Data Science, and Computer Science. Ranked in the top 0.8% in Kaggle coding competitions. Proven ability to tackle complex real-world business challenges and deeply understands business models. Experienced in Natural Language Processing (NLP) and Large Language Models (LLM) workflows. As a native bilingual English and Mandarin speaker, excels in cross-functional collaboration across departments.

## Professional Experience

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### Machine Learning Engineer, SSR(守税人)

Mar 2021 to Jan 2025, Beijing, China

- Developed an interactive client-intake AI system incorporating intent classification, semantic analysis, and retrieval-augmented generation (RAG), cutting manual document triage time by 55%.
- Refactored existing rule engines using NLP/LLMs and distributed computing designs to reduce inference latency by 20%.
- Built ML-driven risk detection workflows that cut document review time by 35%.
- Collaborated in an Agile, cross-functional team with developers, legal, and finance experts.

### Director of Business Development, Cleveland International Fund

Nov 2017 to Oct 2019, Cleveland, OH, U.S.

- Led a team to close six private placement offerings, raising over \$370M for commercial real estate developments in the U.S. Midwest.
- Managed relationships with 300+ FINRA-accredited investors, negotiating strategic partnerships and securing new business opportunities.

## Projects and Coding Competitions

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### Competitions (Expert), Kaggle rank top 0.8%

March 2022 to Present

#### LLMs – You Can't Please Them All (Silver Medal, Ranked Top 3%)

Collaborated with ML professionals to engineer template-, heuristic-, and optimization-based injection attacks using iterative Bayesian chaining to infer Large Language Models (LLMs) behaviors in a black-box environment.

#### Jane Street Real-Time Market Data Forecasting (Bronze Medal, Ranked Top 6%)

Designed and trained a deep learning model (RNN) with online fine-tuning with real-time market data. Developed robust data and feature engineering pipelines.

#### Santa 2024 - The Perplexity Permutation Puzzle (Bronze Medal, Ranked Top 5%)

Developed simulated annealing and evolutionary algorithms to solve large-scale black-box optimization problems with a search space of  $9e157$ . Trained a deep neural network to evaluate candidates, reducing computational resource requirements for LLM forward passes by over 75%.

### Micro-Masters in Statistics and Data Science, MITx

Feb 2024 to Feb 2025

- Successfully completed 4 MIT graduate-level courses covering probability, statistics, machine learning, and computational data analysis with 93% in overall grades. Passed 4 proctored exams covering each course.
- Built transferable ML engineering skills, including data/feature engineering, model development and deployment, testing, and QA.

## Business English Instructor, Freelance

Dec 2019 to Present, Beijing, China

- As a native English speaker, delivered over 800 hour-long live sessions and managed 59 tailored student programs, students includes university professors, executives, and legal professionals.
- Independently developed and authored student curricula systems, ensuring each student receives a unique curriculum tailored to their professional backgrounds.

## Skills

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**Machine Learning:** Deep Learning , Artificial Intelligence (AI) , Neural Networks , Applied Machine Learning , Predictive Modeling , Statistical Modeling , Model Development/Selection , Pattern Recognition , TensorFlow , PyTorch , LangChain

**Data Engineering:** Data Science , Statistics , Feature Engineering , Data Visualization , Tableau , Pandas , Polars , NumPy

**Domains:** Natural Language Processing (NLP) , Large Language Models (LLM) , Prompt Engineering , Conversational AI , Text Mining , Retrieval-Augmented Generation (RAG) , Image Processing , 3D Rendering/Reconstruction , Generative AI , Transformers , Diffusion , Image Generation , Fine Tuning

**SDE Fundamentals:** Python , Javascript , Algorithms , Data Structures , Computer Science , Problem Solving , Full-stack Web Development , Troubleshooting , Maintenance

**MLOps:** Amazon Web Services (AWS) , Kubernetes , Cloud Computing , Distributed Training , High Performance Computing (HPC) , Distributed Computing

## Certificates and Languages

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English - Native, Mandarin - Native, Japanese - Business Conversational

FINRA, Series 63 - Uniform Securities State Law; FINRA, Series 82 - Private Securities Offerings Representative

## Education

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Micro-Master's, Statistics and Data Science, MITx

Bachelor of Economics, University of Maryland