

TAO HE

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OBJECTIVE

Graduate student in Computer Science with research and project experience in machine learning, computer vision, and deep learning, seeking opportunities in AI/ML/CV engineering and research roles.

EDUCATION

Master of Computer Science, Northeastern University Expected 2026
Relevant Coursework: Machine Learning, Data Mining, Algorithm, and Operating Systems.

Bachelor of Economics and Management, Nanjing University of Finance and Economics 2019 - 2023
Relevant Coursework: Linear Algebra, Calculus, Probability Theory and Statistics.

SKILLS

Programming Languages	Python, Java, C, R, SQL, HTML/CSS/Javascript
Frameworks	PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, Flask
Tools	AWS (EC2, S3), Docker, Git, Linux, SQL Databases, MongoDB, Excel

PROJECTS

CIFAR-10 Image Classification with ResNet18. Built an end-to-end image classification pipeline using PyTorch and transfer learning with ResNet18 on the CIFAR-10 dataset. Achieved 68.5% test accuracy after two-phase training (warm-up + fine-tuning). Deployed the trained model as a Flask inference API, supporting both curl and web upload requests. Published Docker image to Docker Hub and deployed on AWS EC2 for reproducible inference service. ([Github](#))

BiLSTM Sentiment Classification System. Built a multi-class sentiment analysis pipeline using BiLSTM with attention, layer normalization, and max pooling. Fine-tuned pre-trained BERT embeddings with custom trainable layers, boosting recall by 20% over baseline. Benchmarked against BiGRU and BiLSTM baselines; achieved F1-score 0.71 on benchmark dataset. ([Github](#))

Machine Learning for Time-Series Forecasting. Developed and compared machine learning and statistical models (ARIMA, SVR, KNN) for multi-index time-series forecasting. Applied statistical diagnostics (ADF, ACF, PACF) to ensure stationarity and improve model reliability. Engineered features with PCA and applied cross-validation, reducing prediction error by 80%+ (MAE, RMSE). ([Publication](#))

Cardtrip. Developed a full-stack AI travel planning application as an official submission to the Microsoft AI Agents Hackathon, integrating OpenAI, Google Maps, and LLM-based reasoning to simulate a smart trip assistant. ([Demo](#))

EXPERIENCE

Macro Strategy Intern Apr 2023 - Jun 2023
FE expert *Shanghai, China*

- Conducted macroeconomic and financial data analysis using Bloomberg Terminal, focusing on FX risk and market trend forecasting for multinational clients (e.g., OPPO, Aland).
- Built interactive dashboards to streamline external reporting workflows, reducing turnaround time by 30%+ via data visualization and semi-automation.

Financial Market Intern Mar 2023 - Apr 2023
Wanwu Shusheng *Shanghai, China*

- Conducted in-depth research on financial market data and drafted comprehensive industry reports for internal use and client presentations.
- Applied statistical and fundamental analysis methods to evaluate macroeconomic trends and financial risks.