

# Hongyi Chen

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## EDUCATION

2023 - present Undergraduate (**Data Science**) at **CUHK Shenzhen** (Top 20%)

*Relevant Coursework: Data Structure, Machine Intelligence and Application, Machine Learning...*

Fall 2025 Visiting Student (**Computer Science**) at **UC Berkeley**

*Relevant Coursework: Intro to AI, Deep Learning, Machine Structure...*

## INTERNSHIPS

**China Merchant Bank**

*Fintech Intern*

**Xiamen, China**

*Jul - Aug 2025*

- Model Optimization & Quantifiable Results: Led the hyperparameter optimization and validation for a Chinese anti-financial fraud text model. Successfully boosted AUC-ROC by **12%** to  $> 0.95$ , mitigating high false-positive rates.
- AI (XAI) Interpretability: Independently integrated the TOKEN-level feature contribution analysis.

**DigitSuper Technology**

*Data Analysis Intern*

**Shenzhen, China**

*Apr - Jun 2025*

- Scalable Data Analysis: Leveraged Python and SQL to analyze **10,000+** Amazon advertising data, identifying key trends that informed campaign strategies and improved product BSR by **20%**.
- A/B Testing & Optimization: Designed and validated  $2 \times 2$  factorial A/B tests on real-time bidding strategies. The optimization mandates directly resulted in a **10%** improvement in ROAS.

## RESEARCH EXPERIENCE

**Impact of Polysemy on Model Editing**

**Course Project**

*Undergraduate Research Assistant*

*Nov - Dec 2025*

- **Independently designed and validated** experiments showing that neuron-level editing (**FiNE**) causes more collateral damage than layer-level editing (**ROME**) when targeting polysemantic neurons.
- **Independently developed** a research methodology on **Pythia-6.9B**, using **Causal Tracing** and **Collision Analysis** to systematically locate polysemantic neurons, compare collateral damage, and analyze the precision-robustness trade-off of FiNE vs. ROME.

## PROJECTS

**Ranno.ai | Google Chrome Built-in AI Hackathon 2025**

**GitHub Repo**

*Full-Stack Developer*

*Oct 2025*

- Architected an on-device AI solution using **Chrome Prompt API (Gemini Nano)** for Natural Language Understanding (NLU), parsing complex user requests into a precise **V2 JSON Intent Schema**.
- Integrated **Google Maps JavaScript API** (Directions, Places, Geometry) with **San Francisco's Crime and Amenities Data APIs** to build a hybrid routing system.
- **BackEnd:** Developed intelligent routing logic to dynamically generate personalized paths.
- **FrontEnd:** Leveraged **React (Vite)** and **TypeScript**, ensuring a responsive and robust user interface.

# GRU-Based Regime Adaptive Stock Forecasting

*Quantitative Researcher*

[GitHub Repo](#)

Nov - Dec 2025

- Designed a lightweight **GRU network** optimized with **LayerNorm** and **Tanh** activation to process low signal-to-noise financial data, successfully resolving the "**Dying ReLU**" issue and preventing model collapse.
- Addressed **Market Regime Shift** by constructing a balanced training dataset (excluding 2020 liquidity-driven outliers); this strategy prevented overfitting to bullish patterns and significantly improved **generalization** in out-of-sample bear markets.
- Shifted the model checkpointing metric from MSE Loss to **Information Coefficient (IC)** to align with the Top-K ranking strategy. The optimized model **narrowed the annual loss by over 70%** (from -25.4% to -7.4%), achieving a risk profile comparable to the market benchmark.

## HONORS & AWARDS

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School of Data Science - Dean's List

2023-2024

Zhixing Social Practice Award (Second Prize)

2024-2025

## SKILLS

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Programming	Python, R, SQL, Java, C, LaTeX, JavaScript, HTML/CSS, Git
Framework	ML/AI (PyTorch, Scikit-learn, Transformers), Data (Pandas, NumPy, Matplotlib, Tableau), Web (React)
Language	Chinese (Native), English (Advanced, TOEFL 109)

## LEADERSHIP & EXTRACURRICULAR

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### Zhixing Social Practice Program

Shenzhen, China

*Project Leader*

June 2024 - Oct 2024

- Designed the quantitative survey methodology (500+ surveys) and led data collection; utilized **Pandas** for complex data preprocessing. Implemented **K-Means clustering** to segment survey data, uncovering 4 distinct marriage-view archetypes among youth groups.
- Delivered the final analytical report, which was **adopted by the university administration (CUHK-Shenzhen)** to inform future student engagement strategies.

### Rural Revitalization Program

Jiangxi, China

*One of the Team Leaders*

Aug 2024

- Organized and led multi-site qualitative interviews with key **stakeholders** (e.g., local government officials, villagers).
- Synthesized findings using **Thematic Analysis** to deliver a strategic report, which was **formally submitted to the local government** and **featured by local media** for its actionable insights.

### Minerva Soccer Team

CUHK-Shenzhen

*Team Leader*

2023 - present

- Fostered team cohesion and directed on-field strategy, leading regular training sessions and coordinating team logistics.