智启未来，融汇英才

——探索生成式AI时代金融行业的多元职业路径与人才培养之道

经12-计18 张诗颖

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About Myself ……

张诗颖

经12-计18

学业 Academic

- 经济与金融+计算机科学与技术
- 大三交换：英华学者〔牛津大学〕
- 推研绩点：3.93，Rank 1/28

实习 & 比赛 Career

- 高盛 - GIR Equity Researcher
  〔全年级唯三BB暑期实习〕
- 淡水泉 - Investment Researcher
- 信弘天禾 – 量化研究员
- 腾讯 – 战略咨询 PTA
- HSBC商业案例比赛〔代表经管学院〕
  全国第二，进入亚太决赛

科研 & 学术 Research

- 牛津交换期间：20+ Economics Essay
- SRT:《基于中国股票与期货市场的量化因子研究与定价分析》
- 沈涛老师助研项目:《海外REIT对中国资产收购分析》

社工 & 志愿

- 经管学院学生会联络部部长
- 计算机系科协智能体部部员
- 计算机系辩论队领队
- 经12-计18 班长
- 答疑坊志愿者
- 清华大学优秀招生志愿者

文体 & 实践 & 兴趣

- 首高板球比赛第五名〔代表清华〕
- 计算机系赴西雅图实践支队 – 调研组负责人
- 伦敦全英德扑比赛〔代表牛津参赛，进入决赛桌〕
- 校辩论赛全程最佳辩手

Agenda

1. 传统金融 Break into Wallstreet!

一级二级/买方卖方？目前金融就业现状？中国经济现状？

2. Why 金融？

计算机 vs 金融，学术 vs 业界

3. What is AI？产业现状如何？

课程/知识框架；Debate on the street: AI = Bubble?

4. 金融 X AI

学术前沿；业界〔量化 + 〕

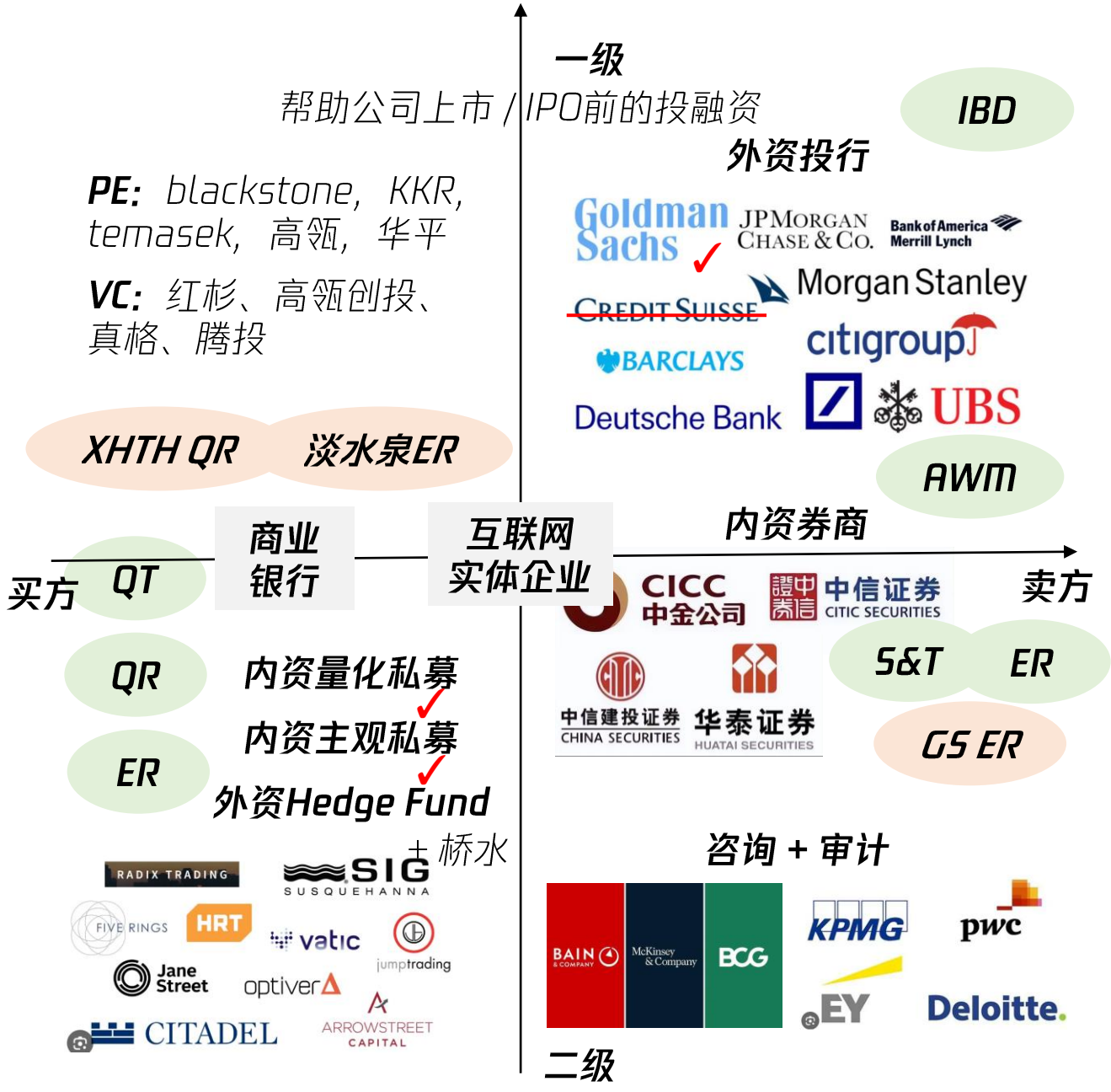
Why 金融？金融行业的职业道路？

- **面试流程**
  外资summer intern：OA / 1st / 2nd/ Superday
  〔在前一年的9-12月份进行面试〕
  内资intern：一般提前1~3个月投递，关注JD即可

- **面试内容**
  Behavioral / CV
  Tech〔会原，stock pitch，公金，时事新闻〕

- **实习体验**
  卖方：WLB差，外资culture好，aggressive
  买方：WLB稍好，业绩压力√

  主观：行研&写研报，三张表，DCF估值建模
  量化：写代码，数学建模，backtesting，挖因子
  IBD：上市材料 + pitch
  S&T，AWM……
  ER：insights 中国现在的经济现状？



Why 金融？金融行业的职业道路？

- **计算机 vs 金融**
  - 对整个世界和市场有很深的理解和洞察
  - 能够追踪和解释多变量下的因果关系

  - 不是一门“熟练工种”（重复劳动就能带来娴熟和技艺的精湛）
  - 需要不断的动脑子去思考、猜想、验证

- **学术 vs 实业**
  - dive deep into models and thesis
  - R，数据处理，回归，计量，高等数学
  - 助研 => phd

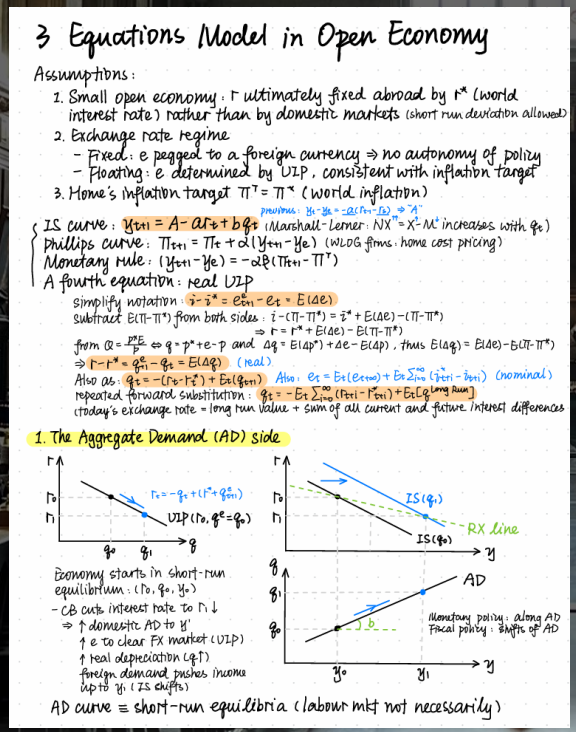
  - 频繁反馈，交互性 => fighter
  - 更紧密地追踪市场动态
  - people business
  - 本科 + 硕士

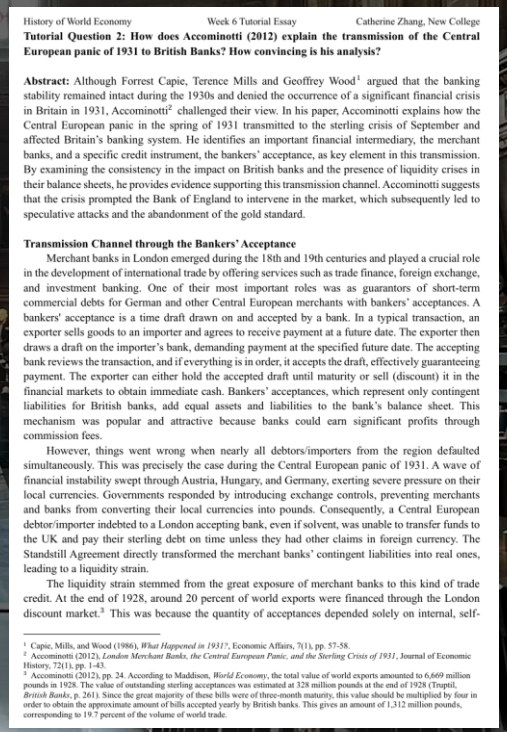
“英华学者”——牛津大学交换项目 2023-2024

Per Week:

- Lecture 知识框架
- 读5~8篇论文 / 教科书
- 写2000词的Essay
- Tutorial上和professor 1v3讨论你的文章

一学期8周，Econ学生一般一学期选2门课




History of World Economy Week 6 Tutorial Essay Catherine Zhang, New College

Tutorial Question 2: How does Accominotti (2012) explain the transmission of the Central European panic of 1931 to British Banks? How convincing is his analysis?

Abstract: Although Forrest Capie, Terence Mills and Geoffrey Wood[1] argued that the banking stability remained intact during the 1930s and denied the occurrence of a significant financial crisis in Britain in 1931, Accominotti[2] challenged their view. In his paper, Accominotti explains how the Central European panic in the spring of 1931 transmitted to the sterling crisis of September and affected Britain's banking system. He identifies an important financial intermediary, the merchant banks, and a specific credit instrument, the bankers' acceptance, as key element in this transmission. By examining the consistency in the impact on British banks and the presence of liquidity crises in their balance sheets, he provides evidence supporting this transmission channel. Accominotti suggests that the crisis prompted the Bank of England to intervene in the market, which subsequently led to speculative attacks and the abandonment of the gold standard.

Transmission Channel through the Bankers' Acceptance

Merchant banks in London emerged during the 18th and 19th centuries and played a crucial role in the development of international trade by offering services such as trade finance, foreign exchange, and investment banking. One of their most important roles was as guarantors of short-term commercial debts for German and other Central European merchants with bankers' acceptances. A bankers' acceptance is a time draft drawn on and accepted by a bank. In a typical transaction, an exporter sells goods to an importer and agrees to receive payment at a future date. The exporter then draws a draft on the importer's bank, demanding payment at the specified future date. The accepting bank reviews the transaction, and if everything is in order, it accepts the draft, effectively guaranteeing payment. The exporter can either hold the accepted draft until maturity or sell (discount) it in the financial markets to obtain immediate cash. Bankers' acceptances, which represent only contingent liabilities for British banks, add equal assets and liabilities to the bank's balance sheet. This mechanism was popular and attractive because banks could earn significant profits through commission fees.

However, things went wrong when nearly all debtors/importers from the region defaulted simultaneously. This was precisely the case during the Central European panic of 1931. A wave of financial instability swept through Austria, Hungary, and Germany, exerting severe pressure on their local currencies. Governments responded by introducing exchange controls, preventing merchants and banks from converting their local currencies into pounds. Consequently, a Central European debtor/importer indebted to a London accepting bank, even if solvent, was unable to transfer funds to the UK and pay their sterling debt on time unless they had other claims in foreign currency. The Standstill Agreement directly transformed the merchant banks' contingent liabilities into real ones, leading to a liquidity strain.

The liquidity strain stemmed from the great exposure of merchant banks to this kind of trade credit. At the end of 1928, around 20 percent of world exports were financed through the London discount market.[3] This was because the quantity of acceptances depended solely on internal, self-

[1] Capie, Mills, and Wood (1986), *What Happened in 1931?*, Economic Affairs, 7(1), pp. 57-58.
[2] Accominotti (2012), *London Merchant Banks, the Central European Panic, and the Sterling Crisis of 1931*, Journal of Economic History, 72(1), pp. 1-43.
[3] Accominotti (2012), pp. 24. According to Maddison, *World Economy*, the total value of world exports amounted to 6,669 million pounds in 1928. The value of outstanding sterling acceptances was estimated at 328 million pounds at the end of 1928 (Truptil, *British Banks*, p. 261). Since the great majority of these bills were of three-month maturity, this value should be multiplied by four in order to obtain the approximate amount of bills accepted yearly by British banks. This gives an amount of 1,312 million pounds, corresponding to 19.7 percent of the volume of world trade.

不得不提的 AI 浪潮 ……

- **AI 是什么**

  Machine Learning 统计机器学习 => 神经网络

  - *统计方法的参数估计：回归，Maximum Likelihood*
  - *神经网络：目标函数的最小值 => 梯度下降*

  细分方向：CV，NLP（GPT） ……

- **国内外的AI行业现状**

  Infrastructure => Algo => Application

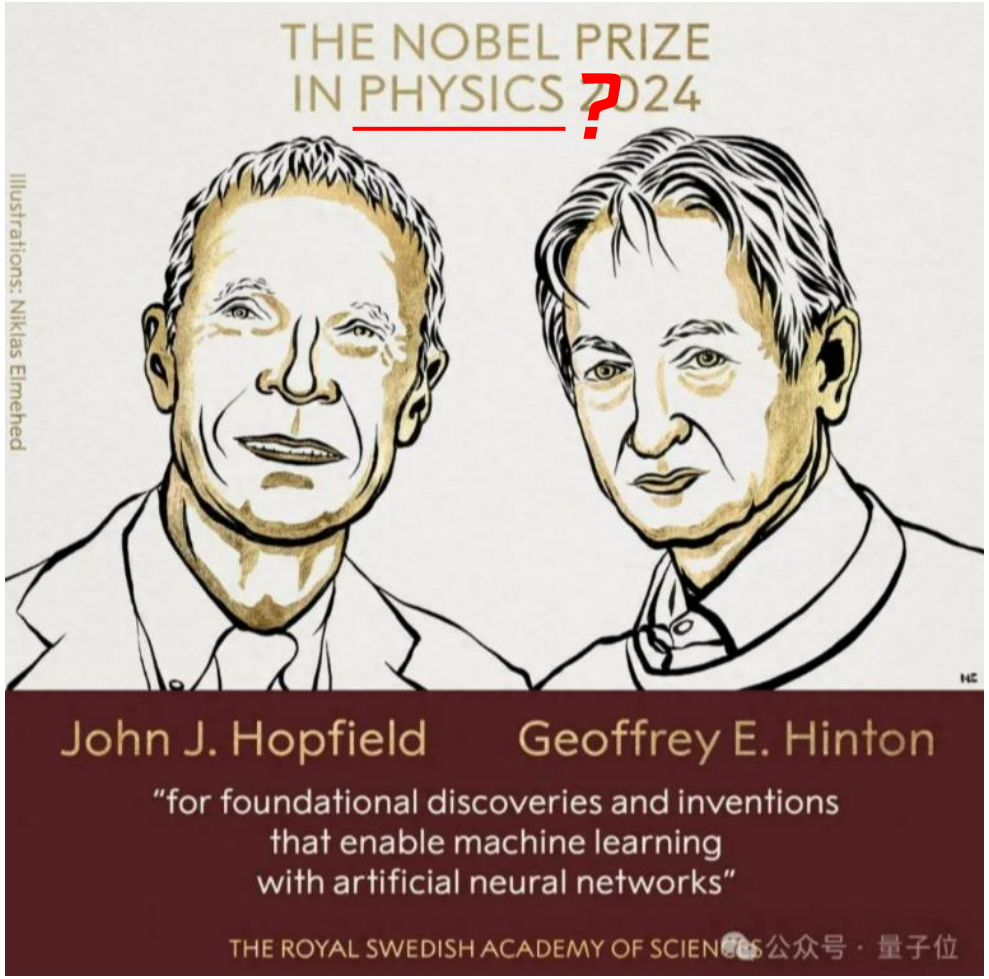
  Debate on the street: AI = bubble?

Goldman Sachs | Global Macro Research

ISSUE 129 | June 25, 2024 | 5:10 PM EDT

TOP of MIND

GEN AI: TOO MUCH SPEND, TOO LITTLE BENEFIT?



不得不提的 AI 浪潮 ……

- AI 是什么（specifically 大语言模型）

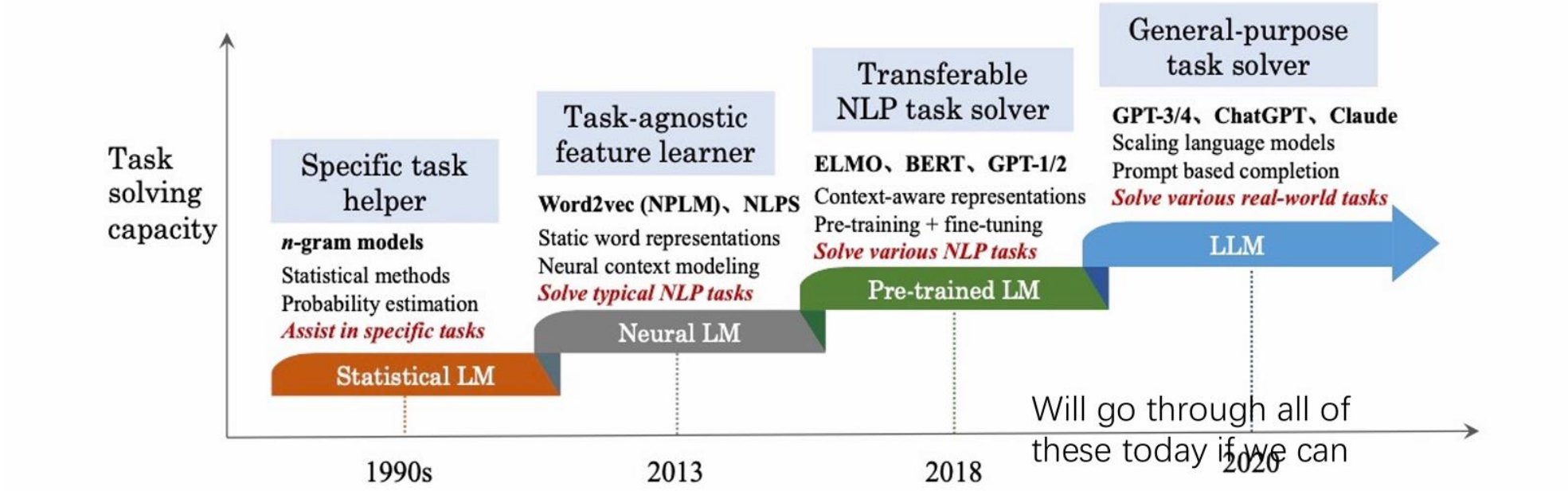


Fig. 2: An evolution process of the four generations of language models (LM) from the perspective of task solving capacity. Note that the time period for each stage may not be very accurate, and we set the time mainly according to the publish date of the most representative studies at each stage. For neural language models, we abbreviate the paper titles of two representative studies to name the two approaches: NPLM [1] (“*A neural probabilistic language model*”) and NLPS [2] (“*Natural language processing (almost) from scratch*”). Due to the space limitation, we don’t list all representative studies in this figure.

金融 X AI

- **金融 X 数据科学 => 〔互联网〕企业 BA**

  AI × 数据处理 ✓〔AI是工具 / 应用层〕

  搜集数据 => 清理数据 => 画图 => 得到insights〔分析〕

- **算法 X 金融行业 => 量化私募 QR/QT**

  本质上是算法岗，金融是应用场景

  挖因子 => 数学建模/因子组合 => 回测 => market

- **统计 X 金融 X 机器学习 => 学术研究**

  NLP：非结构化数据处理、情感提取……

  计量回归：OVB 的问题怎么处理……

  Setbacks: Interpretability Issues, Causal Relationships, High Noise Levels, Data Scarcity and Limitations, Validation Challenges

- **AIGC Startups ……**

Structured Data:

- Highly organized and formatted in a way that's easy to analyze
- Typically stored in databases or spreadsheets
- Examples:
  - Stock prices and returns,balance sheet
  - Economic indicators (GDP, inflation rates, etc.)
  - High Frequency Transaction data

Unstructured Data:

- Data that lacks a predefined format or structure
- More challenging to process and analyze
- Examples:
  - News articles, social media posts, and blogs
  - Annual reports (e.g., 10-K filings)
  - Conference call transcripts
  - Emails and communication data

Applications in Finance and Economics:

- Structured data helps with traditional econometric models and financial analysis
- Unstructured data is increasingly used for sentiment analysis, topic modeling, and extracting signals for market trends

Paper: *Network Regression and Supervised Centrality Estimation* by Junhui Cai, Ran Chen, Dan Yang, Wu Zhu, Haipeng Shen, and Linda Zhao

- In network analysis, researchers often use a two-step method to estimate the effect of network centrality.
- This example illustrates how the SVD estimate can deviate from the true eigenvector when the observation error is large.

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- Q&A -