NBER Conference on Artificial Intelligence
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Overview

- many papers are quite high-level, few concrete papers and models
- papers range from applying AI to very abstract discussions (Singularity)
- Relatedly, range from very short run to very long run implications
- Now: just quickly mention basic content of papers in turn to get an idea
- Background: find all papers, slides and videos on this website

Cockburn et al. - AI and innovation

- AI will impact quality of goods/services plus production efficiency
- but maybe biggest impact: AI as a 'new method of invention'
  - reshaping nature of scientific process and organization of R&D
- history of AI in research
  - application driven by other fields (robotics) vs GPT candidates vs 'method for invention' (deep learning?)
- preliminary evidence: uptick in importance of 'application research'
- implications for organizational process and policy response
  - hypothesis testing on 'hand-created' datasets for specific purpose vs exploitation of 'big data' already existing
  - former: test single, specific hypothesis
  - latter: data abundance allows testing of more complex interdependencies
  - regulation of data access?

Bryolfson et al. - AI and Productivity Paradox

- for increasing number of tasks, AI outclass human beings
- Puzzle: AI with high hopes but little shows in statistics
  - productivity and output growth rates are declining/low
- explanations: false hopes/mismeasurement/concentration of rewards/implementation lags
- favor last point: AI as GPT with implementation lag/slump
- comparison to electrification: productivity advances with similar lag
- diffusion is challenging, goes well beyond ICT capital to organizational change etc.
- growth accounting with intangible capital necessary
  - GPT requires general investment – unobserved in investment data
  - management practices/organization/training etc.

Milgrom, Tadelis - AI and market design

- applied paper
- how to use machine learning to make more complex auction designs feasible
- application: US broadband spectrum auctions
- 2nd topic: using ML in online sales measuring consumer satisfaction

Athey - AI impact on Economics

- how to translate traditional econometric toolkit to new methods?
  - causality, VI, etc.
  - what about structural models?
- From ML: model validation, selection etc.
- Essentially lit. review on current state of the art in economics re above topics

Agrawal et al. - Prediction vs Judgement

- predictions of states vs judgement of state consistent rewards
- study how the two interact in decision problems
- application to AI:
  - focus on prediction only
  - how is the tradeoff above impacted by AI advances?

Tucker - AI and Privacy

- privacy in transactions: primarly consumer willingness to pay - impact of AI?
- algorithmic bias - racial or other
- fundamental issue: Data Generating Process (input to AI) is of human source
  - issue: transmit existing (or historical) biases to AI decisions

Goldfarb, Trefler - AI and Trade

- increasing returns to scale warrant strategic trade policy
- IRS clearly the case in IT/AI
- national vs international returns to scale
  - data, knowledge diffusion
- data protection issues
  - large datasets competitive advantage
  - in view of the above: int'l race to the bottom in privacy laws
- many current trade policy issues related to data
  - privacy, localization, property rights, access to gov data, AI regulation, source code protection

Camerer - AI and Behavioral Economics

- ML has role in 'mining'/discovering new forms of behavioral biases
- human decision biases sometimes resemble 'ML gone wrong'
  - overconfidence/overfitting
  - sparsity

Sachs - AI and income inequality

- some facts on evolution of labor share in the economy/labor share by sector/labor share by educ/educ attainment/importance of R&D, IP/...
- basic framework of structural change
  - very basic and incomplete

Aghion, Jones, Jones - AI and Economic Growth

- AI in goods and ideas creation
- implications for growth rate/labor share/IO?
- consequences of singularity?
- main two impacts:
  - continued automation
  - baumol's cost disease

Mokyr - Technology and Labor

- punch line: we've seen this before
- potentially different: speed of adjustment
- works under the assumption of perfect substitutability (cf. Caselli and Manning)
- If singularity: managing the transition will be key
  - AI like oil windfall: Norway vs Nigeria

Shapiro, Varian - ML, market structure, competition

- What are the competitive effects of AI?
- key bottleneck in ML: (training) data
- data as a 'essential facility' in competition law
- AI and IO
  - Returns to scale and first mover advantage
  - ML and vertical integration?
  - potential structure of the 'ML-Industry'?
- downstream effects:
  - ML/AI changes minimum efficient scale
  - new forms of price discrimination
  - product differentiation
  - algorithmic collusion

Korinek, Stiglitz - AI, labor replacing TC and income distribution

- What happens if labor replacing technology arrives?
- 1st best: everybody is perfectly insured – everybody wins!
- problem: people are not perfectly insured against TC
- role for redistribution: mimic missing insurance markets
- why are these markets missing in first place?
  - inherent information problem: what is the future state space?
  - innovation incentives
- if PPF shifts out, potentially redistribution can make everybody better off
- central question to desirability of TC: how costly is redistribution? (from capital to labor owners)
- Q: What public policies can ensure pareto improvement of TC?
  - think big: UBI, carbon tax (taxes LR scarce factor!) etc.
- growing sectors are dominated by public regulation (health, educ)

Autor, Salomons - Robocalypse now?

- motivation: looming labor immiseration scenarios
- Q: is recent labor augmenting TC eroding employment?
- productivity growth –> sales growth or decline?
- cross-industry spillovers vs direct effects?
- stability of productivity-employment connection through time, esp 2000+?
- Results: TC so far
  - net productivity effect on employment is positive
  - channel: spillovers in lagging sectors (esp services)
  - challenge: employment composition (low vs high skilled)
- Data: EUKLEMS + WIOD