

Readings for Erik Brynjolfsson's Economics of Digitization Tutorial

February 22, 2018

This tutorial will focus on two topics:

- Economics of AI
- Measuring the Digital Economy

1. Economics of AI

Required readings:

Acemoglu, D., & Restrepo, P. (2016, rev. 2017). The race between machine and man: Implications of technology for growth, factor shares and employment. NBER Working Paper No. 22252. <http://www.nber.org/papers/w22252>

Agrawal, A. K., Gans, J., & Goldfarb, A. (2017). Prediction, judgment, and complexity. In A. K. Agrawal, J. Gans, & A. Goldfarb (Eds.), *Economics of Artificial Intelligence* (forthcoming). Chicago, IL: University of Chicago Press. <http://www.nber.org/chapters/c14010>

Brynjolfsson, E., & Mitchell, T. (2017). What can machine learning do? Workforce implications. *Science*, 358(6370), 1530-1534. <http://science.sciencemag.org/content/358/6370/1530>

Brynjolfsson, E., Rock, D., & Syverson, C. (2017). Artificial intelligence and the modern productivity paradox: A clash of expectations and statistics. In A. K. Agrawal, J. Gans, & A. Goldfarb (Eds.), *Economics of Artificial Intelligence* (forthcoming). Chicago, IL: University of Chicago Press. <http://www.nber.org/chapters/c14007>

Optional readings:

Acemoglu, D., & Restrepo, P. (2017). Robots and jobs: Evidence from US labor markets. NBER Working Paper No. 23285. <https://www.nber.org/papers/w23285>

Aghion, P., Jones, B. F., & Jones, C. I. (2017). Artificial intelligence and economic growth. NBER Working Paper No. 23928. <http://www.nber.org/papers/w23928>

Agrawal, A., Gans, J., & Goldfarb, A. (2016). Exploring the impact of artificial intelligence: Prediction versus judgment. Retrieved from <https://www.aeaweb.org/conference/2017/preliminary/1426?page=2&per-page=50>

Autor, D. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives*, 29(3), 3-30. <https://www.aeaweb.org/articles?id=10.1257/jep.29.3.3>

Autor, D., & Salomons, A. (2017). Robocalypse now: does productivity growth threaten employment? Retrieved from <http://conference.nber.org/confer/2017/AIf17/Autor.pdf>

Benzell, S. G., Kotlikoff, L. J., LaGarda, G., & Sachs, J. D. (2015, rev. 2016). Robots are us: Some economics of human replacement. NBER Working Paper No. 20941. <http://www.nber.org/papers/w20941>

Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. New York, NY: WW Norton & Company. <http://secondmachineage.com/>

Frey, C. B., & Osborne, M. A. (2017). The future of employment: how susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, 114, 254-280. <https://www.sciencedirect.com/journal/technological-forecasting-and-social-change/vol/114/suppl/C>

Goldfarb, A., & Trefler, D. (2018). AI and international trade. NBER Working Paper No. 24254. <http://www.nber.org/papers/w24254>

Pratt, G. A. (2015). Is a Cambrian explosion coming for robotics? *Journal of Economic Perspectives*, 29(3), 51-60. <https://www.aeaweb.org/articles?id=10.1257/jep.29.3.51>

Korinek, A. & Stiglitz, J. E. (2017). Artificial intelligence and its implications for income distribution and unemployment. In A. K. Agrawal, J. Gans, & A. Goldfarb (Eds.), *Economics of Artificial Intelligence* (forthcoming). Chicago, IL: University of Chicago Press. <http://www.nber.org/chapters/c14018.pdf>

Stiglitz, J. E., & Korinek, A. (2017). Artificial intelligence, worker-replacing technological change, and income distribution. In A. K. Agrawal, J. Gans, & A. Goldfarb (Eds.), *Economics of Artificial Intelligence* (forthcoming). Chicago, IL: University of Chicago Press. <http://www.nber.org/chapters/c14018>

2. Measuring the Digital Economy

Required readings:

Brynjolfsson, E., Eggers, F., & Gannamaneni, A. (2017). Using massive online choice experiments to measure changes in well-being. 5th IMF Statistical Forum, Washington, DC. Retrieved from <https://www.aeaweb.org/conference/2018/preliminary/1598>

Feldstein, M. (2017). Underestimating the real growth of GDP, personal income, and productivity. *Journal of Economic Perspectives*, 31(2), 145-64. <https://www.aeaweb.org/articles?id=10.1257/jep.31.2.145>

Goolsbee, A. D., & Klenow, P. J. (2018). Internet rising, Prices falling: Measuring inflation in a world of e-commerce. http://www.klenow.com/internet-rising-prices-falling_GoolsbeeKlenow.pdf

Optional readings:

Brynjolfsson, E., Hu, Y., & Smith, M. D. (2003). Consumer surplus in the digital economy: Estimating the value of increased product variety at online booksellers. *Management Science*, 49(11), 1580-1596.
<https://pubsonline.informs.org/doi/pdf/10.1287/mnsc.49.11.1580.20580>

Brynjolfsson, E. & Oh, J. (2012). The attention economy: measuring the value of free digital services on the Internet. *Proceedings of the 33rd International Conference on Information Systems*, 4, 3243-3261.
<http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1045&context=icis2012>

Brynjolfsson, E., & Saunders, A. (2009). *Wired for innovation: how information technology is reshaping the economy*. Cambridge, MA: MIT Press.
<https://mitpress.mit.edu/books/wired-innovation>

Cavallo, A., & Rigobon, R. (2016). The Billion Prices Project: Using online prices for measurement and research. *The Journal of Economic Perspectives*, 30(2), 151-178.
<https://www.aeaweb.org/articles?id=10.1257/jep.30.2.151>

Cohen, P., Hahn, R., Hall, J., Levitt, S., & Metcalfe, R. (2016). Using big data to estimate consumer surplus: The case of Uber. NBER Working Paper No. 22627.
<http://www.nber.org/papers/w22627>

Goolsbee, A., & Klenow, P. J. (2006). Valuing consumer products by the time spent using them: An application to the Internet. *American Economic Review*, 96(2), 108-113. <https://www.aeaweb.org/articles?id=10.1257/000282806777212521>

Greenstein, S. & McDevitt, R. C. (2011). The broadband bonus: Estimating broadband Internet's economic value. *Telecommunications Policy*, 35(7), 617-632.
<https://www.sciencedirect.com/journal/telecommunications-policy/vol/35/issue/7>

Groshen, E. L., Moyer, B. C., Aizcorbe, A. M., Bradley, R., & Friedman, D. M. (2017). How government statistics adjust for potential biases from quality change and new goods in an age of digital technologies: A view from the trenches. *Journal of Economic Perspectives*, 31(2), 187-210.
<https://www.aeaweb.org/articles?id=10.1257/jep.31.2.187>

Hausman, J. A. (1996). Valuation of new goods under perfect and imperfect competition. In T. F. Bresnahan & R. J. Gordon (Eds.), *The economics of new goods* (pp. 207-248). Chicago, IL: University of Chicago Press.
<http://www.nber.org/chapters/c6068.pdf>

- Jones, C. I., & Klenow, P. J. (2016). Beyond GDP? Welfare across countries and time. *American Economic Review*, 106(9), 2426-2457. <https://www.aeaweb.org/articles?id=10.1257/aer.20110236>
- Mitchell, T., & Brynjolfsson, E. (2017). Track how technology is transforming work. *Nature*, 544(7650), 290-292. <https://www.nature.com/news/track-how-technology-is-transforming-work-1.21837>
- Nakamura, L. I., Samuels, J., & Soloveichik, R. H. (2017). Measuring the “Free” digital economy within the GDP and productivity accounts. FRB of Philadelphia Working Paper No. 17-37. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3058017
- Stiglitz, J. E., Sen, A., & Fitoussi, J. P. (2010). *Report by the commission on the measurement of economic performance and social progress*. Paris, France: Commission on the Measurement of Economic Performance and Social Progress. <http://ec.europa.eu/eurostat/documents/118025/118123/Fitoussi+Commission+report>
- Syverson, C. (2017). Challenges to mismeasurement explanations for the US productivity slowdown. *Journal of Economic Perspectives*, 31(2), 165-86. <https://www.aeaweb.org/articles?id=10.1257/jep.31.2.165>
- Varian, H. (Sep 2016). A microeconomist looks at productivity: A view from the valley. Presentation, Brookings. Retrieved from <https://www.brookings.edu/wp-content/uploads/2016/08/varian.pdf>
- Waldfoegel, J. (2012). Copyright Protection, Technological Change, and the Quality of New Products: Evidence from Recorded Music since Napster. *Journal of Law and Economics*, 55(4), 715-740. <http://www.journals.uchicago.edu/toc/jle/2012/55/4>