Business of Healthcare

The big story this week was the acquisition of Red Hat by IBM. They plan to keep the Linux platform open-source, so it seems that the main move is for Red Hat's cloud tools, such as the OpenShift platform for Kubernetes. This is at the same time as IBM's Watson head is leaving, so time will tell if IBM is able to shake itself out of 4th place.

https://www.healthcareitnews.com/news/ibm-buys-red-hat-34-billion-gain-open-source-cloud-technologies

https://www.wired.com/story/ibm-buying-open-source-specialist-red-hat-34-billion/

https://www.healthcareitnews.com/news/ibm-watson-head-leaves-role-amid-struggles-declining-revenue

If you thought hard about Walmart's most valuable assets, not far behind the lean supply chain you might list parking lot real estate. They are currently planning to start planning to develop essentially corporate-owned public space, which could include clinics and other health providers. This could end up being an extremely lucrative partnership or a very concerning source of competition for health systems.

https://www.businessinsider.com/walmart-town-centers-parking-lots-2018-10

Insurance companies are engaged in an arms race to develop analytics that will help them compete against competitors. Anthem just hired Google's head of engineering for search to build an AI team. Ultimately, however, I think the potential reach of anything built on claims data will be limited at an individual level, due both to data latency and how far removed it is from the realities of clinical care.

https://www.cnbc.com/2018/10/24/anthem-hired-udi-manber-ex-head-of-google-search-as-chief-ai-officer.html

Some payors, looking to cut costs, are denying payment for ED visits for non-emergency diagnoses. However, a recent data analysis shows that not only are 40% of visits for deniable diagnoses receiving ED-level care, but the symptoms leading to these visits overlap with almost 90% of the "appropriate" visits. Bottom line, when a patient decides to go to the ED, they often have no way of knowing whether their insurance plan will cover the visit until after the doctors find out what's wrong. This is an opportunity to think more creatively about how best to guide people to the right level of care.

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2707430

Data Strategy

Hilary Mason, one of the world's most influential data scientists (Cloudera and Fast Forward Labs) makes a strong case for a deep strategic look at prioritizing analytics projects, including carefully defined default architecture and explicitly accounting for the dependence between projects.

https://hbr.org/2018/10/how-to-decide-which-data-science-projects-to-pursue

Data Science

When setting up reinforcement-learning AI to explore a new domain in an unsupervised manner, it's critical to give the AI a sense of curiosity. However, if that curiosity is poorly specified, you might find

the AI procrastinating learning by watching TV and playing with a laser pointer (this makes me concerned about the ability to tell people apart from machines in the near future). These are things Google thinks a lot about and is working to tweak incentives to address.
https://ai.googleblog.com/2018/10/curiosity-and-procrastination-in.html

Data Science Applications
Portland's own Rishab Jain has won a national prize for using machine learning in imaging (including working with existing imaging machines) to directly identify the pancreas during radiation treatment to cut collateral damage to neighboring tissue. Also, he's 13 years old, so that's sufficient reason to abandon parenting as a competitive pursuit.
http://time.com/5429621/rishab-jain-young-scientist-challenge/

Mayo Clinic is working with a vendor to deploy smart stethoscopes to more broadly diagnose patients with low ejection fractions.
https://www.healthdatamanagement.com/news/mayo-eko-team-on-machine-learning-to-detect-heart-abnormalities

Infrastructure
Uber shares the evolution of their data storage and processing stack over the last four years as their data has grown to hundreds of petabytes. Beyond the admirable transparency, this is a great example of what I've been sharing at conferences about maturity: there is no "end-state" architecture, and you should expect to rebuild your system multiple times as your needs change and expand, and as you bump up against the (technical and process) limits of your current system.
https://eng.uber.com/uber-big-data-platform/