1. Smartphone Surveillance
   1. Using data collected from a smartphone applications has allowed police to capture more homicide suspects throughout the years. When you create data you create a data trail. From applications like Snapchat, Google Maps, even debit card payments can track your time and location through your smartphone.
   2. The increase of smartphones, which have camera, audio, and GPS technology (and applications that successfully track those items) has a direct parallel to the decline of multiple-homicide cases. Having a wider scope of surveillance and tracking technology has helped police zero in on probable suspects in a shorter timeframe than ever before.
   3. <https://www.newsfactor.com/story.xhtml?story_id=113008IOPQUZ>
2. Faceter’s Surveillance Software
   1. Faceter is a combination of data miners to perform recognition calculations on a mobile network for recognition, blockchain for secure payment (with recognition), and machine learning for faster reaction to events to produce Software that tracks real time events and identifies them as dangers.
   2. The product is very top of the line in terms of recognizing events as they are happening and helping users react to it. In surveillance, it offers better recognition tools due to the fact that data miners are working in real time and so are the recognition calculations. For large firms specialized in surveillance the technology seems to be worth it’s price. Especially so considering that the plan is to deploy to mobile.
   3. <https://thenextweb.com/cryptocurrency/2018/03/26/this-blockchain-based-surveillance-startup-detects-crime-in-real-time/>

1. Blockchain as Data Security
   1. Scientists are investing in using Blockchain, specifically Multichain, in effort to create an internal system to improve their research efforts. It will specifically be used to enter reliable medical data which researchers can access readily and without fear of having unreliable data.
   2. It can also be used to track transactions throughout the peer-review process of scientific journals. It will become easier to see why certain research was not published in the system.
   3. Using blockchain will also become a financial advantage. Instead of using world currency, which increases in value and affects the costs of research efforts, having the use of bloackchain will give members permission to add blocks to the chain and therefore keeping the costs low throughout projects.
   4. <https://www.nature.com/articles/d41586-017-08589-4>
2. Using SSRL (Standord Synchrotron Radiation Lightsource) to Retrieve Layered Text
   1. Researchers are using X-ray scans to extract erased, layered text from centuries old manuscripts. The past efforts were not able to extract the data with precision, making a lot of the text illegible. They were also more fears about degrading the manuscript. Most of the process that researches need to sift through involve a lot of attention devoted to a large amount of very small detail, this inevitable will cause human errors along the way.
   2. The SSRL process uses data processing tools to extract the layers, digitally, from the manuscript.; Using machine learning tools and algorithms allows the computer to recognize portions of the manuscript that will allow for a cleared, more precise rebuild; Data-mining is also being used to recolor the images of the various layers of text and parchment that once existed on each page
   3. <https://www6.slac.stanford.edu/news/2018-03-22-hidden-medical-text-read-first-time-thousand-years.aspx>
3. The Internet of Things and Horticulture
   1. First Consulting and Hortilux Schreder have partnered to produce a forcasting model to predict the expected yield of greenhouse crops. The data will used to determine production will include data from Hortilux’s LED light systems via sensors against the plant/produce growth to develop better methods of growth. This will help curve energy consumption, adapt setting to maximize growth of produce, and cultivate an over-all better environment for plant growth.
   2. <https://www.consultancy.uk/news/16212/internet-of-things-cultivation-boosts-greenhouse-horticulture>
4. Shark Attack Mitigation Systems (SAMS) Using Sonar Echo
   1. Clever Buoy is a buoy with built in shark detection system that uses multi-beam sonar to determine a shark’s location and movement patterns. Clever Buoy is being used alongside with drones to better detect shark location and prevent shark attacks. Instead of using aggressive techniques to keep sharks away, we can use this technology to detect when sharks are approaching an area. Clever Buoy then texts an alert to lifeguards on watch to notify of shark in the area along with the shark’s coordinates. This offers a live response to shark siting than anything available before. Using sonar helps locate sharks underwater and reveal their location with more precision than optical data.
   2. <http://www.sharkmitigation.com/cleverbuoy.html>
   3. <https://www.theatlantic.com/technology/archive/2018/03/can-ai-stop-shark-attacks/556727/>
5. IoT Sensors in Healthcare
   1. IoT sensors are being used in healthcare to monitor vital signs, provide warning alarms and notifications when something is going wrong, and in feeding data to other platforms. IoT is helping the increase the quality of data collected, which subsequently leads to creating a better diagnosis.
   2. <https://www.prnewswire.com/news-releases/the-global-market-for-internet-of-things-iot-sensors-in-healthcare-totaled-11-billion-in-2017-and-is-estimated-to-reach-19-billion-by-2022-growing-at-a-compound-annual-growth-rate-cagr-of-127-for-the-period-of-2017-2022-300608084.html>
6. Analytics and Security
   1. Having the ability to analyze user behavior in analytics tools to determine what normal user behavior is and then from there determine anomalies. This not only helps detect possible dangers, but where those dangers are coming from and what devices they are using to achieve their objectives. Using user behavior analytics can help stop a data leak before it occurs.
   2. <http://www.digitaljournal.com/business/why-user-and-entity-behavior-analytics-matter/article/517246>
7. Mulesoft and Legacy Systems
   1. Salesforce has announced that they have acquired MuleSoft, which is a we-service that will allow the connections of different data sources to their data centers. This will allow the integration of data from legacy systems and make them available to businesses who may want to integrate older data to newer cloud-based data. In business, buying tehchnology is always a risk because you are buying software for individual systems. This will allow the integration of all data collected on legacy systems and can provide better saving for a business in the long-run.
   2. <https://blogs.wsj.com/cio/2018/03/28/salesforce-seeks-to-help-firms-unlock-data-qa/>
8. Smart Conveyor in Logistics
   1. Using the motor inside a drive roller, engineers have found a way to turn them into sensors to better control the conveyor belt to adapt to changing conditions. This system allows for optimal spacing, sorting according to weight and dimensions of boxes, it also helps to stop pile-ups when there is more flow. All of this saves on time and effort in the long-run while speeding up package delivery time.
   2. <https://phys.org/news/2018-03-smart-conveyor-rollers-optimize-parcel.html>