Article summaries

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At Aalto University, a research study was conducted to understand how the layout of mobile applications attracts our eyes. This team used eye tracking technology to see where the user's eyes went when presented with screenshots of mobile applications. Typically, the eye would jump to something on the screen that is bright, but the studies found that this was not the case. This is possibly due to the fact that everything on the screen was bright and colorful, causing the user to not focus on just one thing. Abstract: A study at Aalto University concluded that the eye does not obey typical visual attraction rules when faced with mobile application designs. https://www.sciencedaily.com/releases/2020/10/201006091220.htm

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Counterfeit products are a prevalent issue that the world faces today; some reports demonstrate that counterfeit trafficking makes up 7 percent of the world's trade. Current counterfeit detection methods can be invasive and damaging. New York University professor Lakshminarayanan Subramanian led the development of a system that can distinguish between original and counterfeit versions of the same product. An NYU startup called Entrupy Inc. is commercializing the product. It operates by identifying microscopic similarities in an original product/class of products in order to distinguish the genuine product from the counterfeit version. Not only is this method non-invasive, it is 98 percent accurate. This system has authenticated 14 million worth of goods in the world's trade. Abstract: An NYU startup called Entrupy Inc. has commercialized a system that can authenticate products and identify counterfeit goods. Unlike current systems, it is non-invasive and 98 percent accurate, and it has helped mitigate the large worldwide problem of counterfeit products. https://www.sciencedaily.com/releases/2017/08/170811124810.htm

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https://www.sciencedaily.com/releases/2009/02/090217112518.htm Researchers at The Fraunhofer Institute for Communications Systems have developed the Elephant Platform to change the current method of developing mobile apps to a way that is far less expensive and less time consuming. Elephant uses templates to easily generate content for use on mobile apps, the author only needs to select what the application will eventually look like by selecting one of these templates, which can then be enhanced by the developer and shared with other users. Abstract: The Elephant Platform can be used to simplify development of mobile apps

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https://www.sciencedaily.com/releases/2020/03/200331130057.htm A research team at Ohio State University studies 150,000 mobile applications. They found that 8.5percent of these apps contained "backdoor secrets." Backdoor secrets meaning "hidden behaviors within the app that accept certain types of content to trigger behaviors unknown to regular users." The research team states that this could be bad practice because if hackers were able to get a hold of this information, it opens up a world of security hazards. Abstract: Some apps contain backdoors put into place by their developers. These backdoors could lead to many security hazards.

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https://www.sciencedaily.com/releases/2012/07/120720135707.htm Computer scientists at Harvard have developed code that can increase security of web and mobile apps. Typically native codes are more vulnerable to hackers who can use these as weak points to gain access to other parts of the computer. Because of this, most apps will run their code using a safer language like JavaScript, however running apps in their native language improves both speed and overall performance of the program. With this new tool, called RockSalt, programers can confirm if native computer codes comply with security policies using an error- free checker to safely run programs without the slow speed of translated code Abstract: Harvard computer scientists developed a tool that allows users to run web and mobile applications in their native code, enhancing its speed and performance without compromising the safety of the program

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https://www.sciencedaily.com/releases/2013/09/130925185603.htm There are over 200 mobile dermatological applications that exist today, with functions varying from documenting lesions, following diagnosis algorithms, and logging treatments. The top three most reviewed apps are Ultraviolet-UV Index, VisualDx, and SPF. The USDA claims it will only regulate apps that function as medical instruments, so there is no guarantee that the majority of apps will actually provide reliable medical information. However, these apps can help alleviate the nationwide shortage of dermatologists. Abstract: Although the large prevalence of mobile applications related to dermatology can help reduce the demand for dermatologists, only a small number will be regulated by the FDA so users should be aware that these applications may not be fully reliable.

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https://www.sciencedaily.com/releases/2018/06/180620150058.htm "iPad neck" is associated with sitting without back support while using a tablet. This condition is way more common in young adults than older and it also affects women twice as much. Possible fixes to iPad neck are: sitting in a chair with back support, using a posture reminding device, standing often, and strengthening your back and neck with exercise. Abstract: iPad neck is affecting many young adults due to them using tablets without sitting with any back support.

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https://www.sciencedaily.com/releases/2012/03/120319111733.htm Research has shown that including ads in mobile apps has privacy and security risks. Apps that are offered for free download use in app ad libraries to generate revenue. These libraries pull ads from remote servers to run on the users phone, receiving the same permissions that the user grants the app itself despite the fact that these are often third party sites with questionable security. Many of these libraries allow advertisers access to the users GPS location as well as their stored phone numbers and call logs. These libraries are a way for third parties to bypass security measures and allow hackers the opportunity to gain access to the user's information. Abstract: Ad libraries used in free mobile apps receive the same permissions granted to the app itself and therefore allow third parties access to users personal information

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https://www.sciencedaily.com/releases/2015/04/150401093623.htm William Halfond is the co-corresponding author of a study that analyzed the negative effects of ads in free smartphone applications. This study found that apps with ads have various drawbacks, including using an average of 16percent more energy, 48 percent more Central Processing Unit time, 22percent more memory use, and 56percent more CPU utilization. Furthermore, apps with ads use 79percent more network data and this can cost almost two cents every time the app is used. These apps are rated 0.003 stars lower than apps without ads. Abstract: A study that analyzed the effects of ads in free smartphone apps found that these apps use more energy, memory, and CPU time and utilization. Because of these drawbacks, these apps are more likely to receive lower user ratings.

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https://www.sciencedaily.com/releases/2019/08/190820200453.htm Finnish StopDia performed a study in which they developed an app that would help users create more healthy eating habits. This app is called BitHabit and it works by adopting new habits to generate a sustainable behaviour change in the user. The study helped its users lose noticeable waist circumference over time. Abstract: The app BitHabit was able to help its users develop healthy eating habits.

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https://www.sciencedaily.com/releases/2019/06/190620100032.htm Computer scientists at Colombia have developed a system that allows apps to be shared among multiple devices, like smartphones, cameras and speakers. Entertainment apps can be transferred to different devices easily to share on a larger scale, iphones can be transformed into a gaming controller for systems like the Nintendo Wii, and wide angle photos and videos can be captured just by using two smartphone cameras directly next to each other. This system can even allow for eye movement to be used as touch screen input, increasing accessibility for disabled users. Abstract: the M2 computing system creates a way for multiple devices and systems to work together and create an enhanced user experience

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https://www.sciencedaily.com/releases/2018/03/180316100609.htm A new app developed in Finland can be used to diagnose atrial fibrillation with 96 percent accuracy without any additional equipment. This app uses the accelerometer that is standard in most smart phones as a way to detect atrial fibrillation and reduce the risk of stroke. Once the app detects atrial fibrillation, the patient can seek medical attention immediately without the need for further testing at the doctor's office. Abstract: a new mobile app can prevent a stroke by detecting atrial fibrillation early using only a smartphone

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https://www.sciencedaily.com/releases/2020/06/200609095027.htm A new study has shown that language learning apps are effective in improving an individual's ability to communicate in a new language. The study conducted by MSU had undergraduate students take a pre-test prior to using Babbel, a language learning app, and then had them take the same test 12 weeks later to assess their improvement. As a whole, the students increased their oral proficiency, grammar and vocabulary at the end of the study. The most important variable was the amount of time invested in the app, as this directly correlated to how much improvement was made. Abstract: Language learning apps are effective in learning a new language as long as the user is consistent with the program

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https://www.sciencedaily.com/releases/2015/01/150128125418.htm Professor Vikram Kapila and Jared Alan Frank of the Department of Mechanical and Aerospace Engineering from NYU have developed mobile applications that will assist students and serve as learning aids as they are getting comfortable working in a lab. The study shows that these students found that these applications allowed them to become more immersed in the experiment. With these apps allowing them to feel more comfortable in the laboratory, these students felt they learned better. Abstract: Mobile applications developed for the use of aiding students experience in a lab showed positive results for knowledge retention of the students.

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https://www.sciencedaily.com/releases/2016/11/161124081556.htm VTT Technical Research Centre of Finland has converted an iPhone camera into a device capable of spectral imaging. Spectral imaging is super useful for sensing slight changes in the environment. Practical uses for this could be in a car controlled by AI and space travel. Mass-produced sensor technology like this will eventually start to be included in all mobile devices as technology progresses. Abstract: Spectral imaging is an up and coming, super useful tool that will help mobile devices sense slight changes in the environment.

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https://www.sciencedaily.com/releases/2016/09/160907113643.htm Storing data in the cloud is often necessary due to the fact that storage and computing power is quite limited on mobile devices; furthermore, when multiple apps try to access the cloud simultaneously, battery life can take a toll. A team of researchers from Binghamton University have designed and developed a service called StoArranger in order to combat this issue. This service can arrange and optimize mobile app requests to access the cloud in order to save power, minimize data use, and optimize cloud storage. Because it works as a "middleware system", it can run on both Apple and Android devices without any changes. Although this system is not yet available, the team plans to develop the app for public use in order to present the public with a practical and scalable way to solve the cloud problem. Abstract: StoArranger is a service designed to arrange and optimize mobile app requests to utilize cloud storage. Once available for public use, this app can save battery power by preventing multiple apps from requesting cloud storage at the same time.

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https://www.sciencedaily.com/releases/2015/01/150130102616.htm Using interactive applications can provide educational benefits to children, however, their socio-emotional development can take a toll due to the distractive properties of these applications. Studies have demonstrated that increased TV use has decreased a child's language and social skill development, and the use of mobile media has similar effects. Other skills at risk of proper development are empathy as well as social and problem solving skills. Authors of this study recommend parents to test these apps out prior to allowing their children to use them, as well as using the media together to enhance interactions and education. Abstract: Although interactive applications can

be educational for children, they can decrease a child's development of social and language skills. It is important for parents to try out each application prior to allowing the child to use it and/or use the application together in order to mitigate these effects.

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https://www.sciencedaily.com/releases/2016/08/160810114119.htm Researchers have developed a prototype for a jacket that doubles as a smart device. This jacket would be a "wearable cloud" that combines a computing system with the lightweight and portable nature of clothing. The prototype consisted of 10 credit card sized computers, three power banks, a small touch screen display, and a winter jacket. This jacket can combine the use of smart watches, step counters, and smartphones into one inexpensive alternative. This wearable design creates a cloud wherever the user is, giving them a platform to store their data without having to rely solely on their mobile devices, which in doing so often results in slower speed Abstract: The wearable cloud is a more efficient, lightweight and inexpensive option for mobile computing

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https://www.sciencedaily.com/releases/2015/11/151113145634.htm Image processing is very intensive on a mobile device which is draining for its power supply. Researchers at MIT have presented a system that reduces a device's bandwidth and energy consumption drastically. The system uses a highly compressed version of the image, which is modified into an even smaller file before being used for modification. In this modification process, individual pixels are isolated and translated back to the server in numbers, where the phone can perform modifications based on these numbers. Abstract: researchers at MIT have developed a method for image processing with a results that look no different from traditional methods, but with significantly less time and energy consumption

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https://www.sciencedaily.com/releases/2019/03/190321092207.htm Mobile health apps are helpful in helping patients and clinicians keeping track of data, but a study found that this data can be shared outside of these apps and received by third parties. Health apps should be more transparent in how their data is being shared and stored, and health professionals need to be aware of the possible privacy risks

associated with this. Abstract: Sensitive health data can be sent to third parties through mobile health apps

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https://www.sciencedaily.com/releases/2020/06/200623145354.htm Researchers developed a tool to see which mobile apps designed for children are compliant with the federal Children's Online Privacy Protection Act. They found that 72 out of 100 mobile apps for kids violated this law. Some apps were found to be able to determine both a child identity and GPS location. In addition, these apps were given access to the child's name and phone number, as well as video and audio recordings stored on the device. Abstract: Apps designed for children have been found to be in violation of a federal child protection law by granting third party access to personal information, including location

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https://www.sciencedaily.com/releases/2016/05/160517083403.htm EnergyBox is a tool that can calculate the energy usage of mobile apps. The researcher that developed this has used it to see how much energy smartphones and other electronic use when connecting to the internet in order to use apps. He found that messaging apps vary in how much energy they consume and how much data is sent in that they are not proportionate, and mobile games have no linear connection on how their energy is spent. Many mobile apps do use a considerable amount of energy and/or data, but software developers have little incentive to decrease their energy consumption Abstract: EnergyBox calculates the energy usage of mobile apps and has shown that most software developers could be making changes to decrease the energy consumption and data usage of their apps, but there remains little incentive for them to do this.

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https://www.sciencedaily.com/releases/2021/02/210210142128.htm Researchers from several institutions conducted a study to see if a mobile app could impact a child's food choices. The children in the study played a game about dietary choices that used implicit learning, which educated the children on healthy food choices without them being aware that they were learning. The children were then immediately given the chance to make real life choices on what food they would like to eat. The children who played the food game were

more likely to choose the healthier option, like choosing raisins over chocolate or cashews over potato chips. Abstract: Children can be affected by mobile games that use implicit learning, and these games can result in a short-term change in their choices which can ultimately be used to guide them towards healthier lifestyles

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https://www.sciencedaily.com/releases/2020/11/201113124045.htm Engineers at the University of Cambridge have teamed up with GlucoRx to develop an app called GlucoRx Vision. Users take a picture of the glucose meter and the app can read and record the glucose levels as well as the time and date of the test. This prevents the redundant manual entry of glucose values, it helps diabetics with poor eye sight with monitoring their glucose, and it can also allow glucose meters that lack wireless connectivity to still be utilized. Abstract: GlucoRx Vision is an app developed to aid diabetics with their blood glucose readings. Not only does it prevent manual entry of values, it is user and environmental friendly.

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https://www.sciencedaily.com/releases/2020/09/200929123544.htm Researchers have developed an app called "genpo" which can analyze the coronavirus genome on an android device without the need of additional laboratory equipment. The app took an average of 27 minutes to determine the coronavirus genome sequence, which means that genomic analysis can now be done in real time and accessible anywhere in the world. Abstract: The app "Genpo" can analyze the coronavirus genome on a smartphone in less than 30 minutes, allowing scientists to read genetic material outside of a lab setting which makes genomics far more accessible to remote regions.

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https://www.sciencedaily.com/releases/2020/08/200825110555.htm A research team has designed a system where cloud service providers and mobile network operators can collaborate to enhance the 5G experience. Mobile network operators like Google or Verizon work separate from cloud service providers which creates a disconnect, and the network is not as efficient as a result. If these two groups work together to share data, then it will optimize resources and create a more cohesive user experience. Abstract: Teamwork between cloud service providers and mobile network operators provides enhanced

network, computing and storage resources that will be essential in the future of technology.