William Xu

Touching Screens Creatively

How will Apple's iPhones use our fingers creatively to achieve efficency in our screen time?

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In the 1970s, Multi-Touch was merely just made as a concept of technology for screens by the European Organisation for Nuclear Research, Massachusetts Institute of Technology, University of Toronto, and other contributors. This was until it was popularized by Apple in 2007, where they invented the first edition of the iPhone, which included the unique feature. Over the course of years where the iPhone is more refined and minimalistic, Multi-Touch gestures continue to provide innovative ways of using our fingers in certain motions we never expect.

So let's move a step back. What exactly are Multi-Touch Gestures?

Multi-Touch is a technology where singular (or multiple) points of human contact against a surface of a touchpad or touchscreen will recognize a particular action. Examples of multi-touch technology features include scrolling by moving two fingers up/downwards, zooming in and out with pinching two fingers, spreading your thumb, and three fingers apart to show your desktop, and more. Showing a variety of ways that Multi-touch gestures can be used on an Apple device, gives us a good impression of how helpful and impactful the feature can assist us as users, whether it's on our hands or our desks. It has also been claimed that its accuracy and speed in fingerprint recognition are faster than existing Android brands, as a case study shows that the iPhone 5 is 2.5 times faster than Google Android devices, as the iPhone responds at an average of 55 milliseconds, in comparison to a slow time of 114 milliseconds with the Samsung S4 Galaxy. Showing evident differences between Apple's iPhones and existing Android brands show how much more advanced and dedicated Apple is towards their technology.

Before going into what's made into Multi-Touch Gestures, we need to investigate how touch-screen is made so that we can then gain a better idea of how Multi-Touch is implemented upon. Apple uses a resistance-based touch surface for their tablets, phones, and laptops, which is

essentially a touch-sensitive computer display, made from a layer of flexible hard-coated outer membrane and glass substrate with insulating spacer dots and conductive coating to complete the structure of the touch screen. Once the touch screen has been completed, Apple is then able to step into the process of implementing Multi-Touch through the use of cameras, lenses, filters, and projectors to complete the commands of Multi-Touch Gestures.

Through multiple years of improvement and development after the concept of "Multi-Touch Gestures", Apple has introduced a new feature that helps support and enhance the technology of Multi-touch Gestures, named Haptic touch. Haptic touch is a haptic technology that uses the pressure of the user's touch to launch specific commands that they request.

In their recent adjustments with iOS 15 in the iPhone, developers have made a response to users that have hand tremors, dexterity, or fine motor control to adjust how their iPhone will respond to touch. This makes it easier for people with these limitations to be able to access Multi-Touch gestures at their own comfort. An example of these adjustments is the ability to adjust touch settings to be slower, so that it is made sure that they are to click apps or tabs without unintentionally making a mistake.

Apple continues to innovate and improve the development of Multi-Touch gestures so that we are able to further assist disadvantaged users and make it easier for everyone to access. The future of the feature is unknown but as with all Apple products, we know that it will be continually developed and the future is for everyone.

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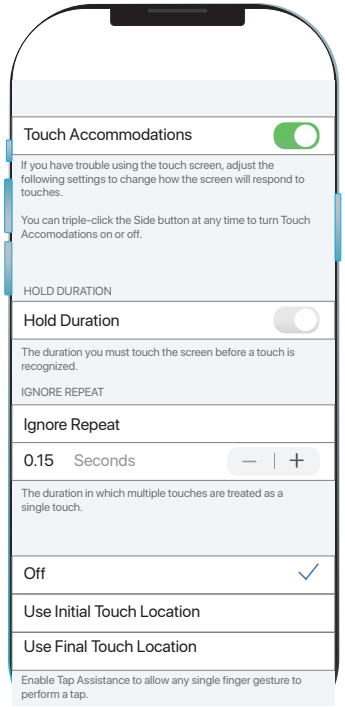
iOS 15 adjusts how iPhone responds to your touch



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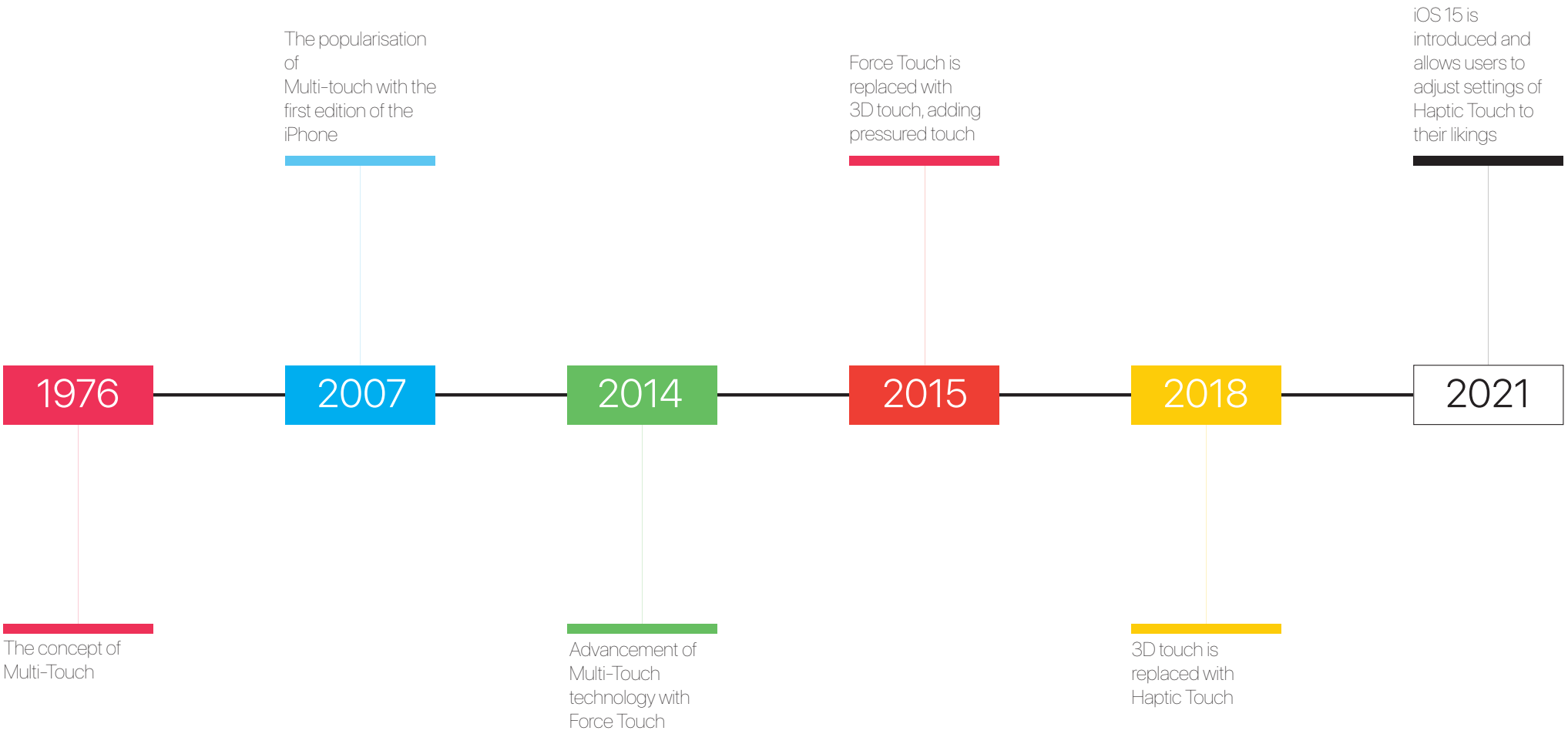
Inside the technology of Multi-Touch Gestures



Evolution of multi-touch gestures