Contents

SPONSORING MEMBER

Next Meeting:
Monday
July
10th

Silicon Summit

A Publication of the Silicon Mountain Macintosh User Group

Apple Vision Pro Evokes Deep Ambivalence

by ADAM ENGST

I'm 55, and I've been covering Apple for over 33 years. There are ways in which I've become jaded, and my opinions about some things have evolved with observation and analysis over time. I now feel that social media is damagingly corrosive and tune in as little as possible, but after years of naysaying, I control nearly every light in my house with Siri and HomeKit. I'm on the other end of the spectrum from the Luddites and will test a new service or product at the drop of a hat, but my decades of experience render me cynical about grandiose claims.

Plus, my life isn't like those of most other people. I live in a semi-rural area on the outskirts of a small, highly educated city, so I have little experience with urban life, public transit, and cheek-to-jowl neighbors. Nor do I commute to an office and work with colleagues in person—I spend my time at home and conduct all my business over the Internet. I'm married, and Tonya and I do most things together. Although we have parenting experience with children of all ages, our son is now an adult living on the other side of the continent.

All that's by way of setting the context for everything I'm about to say about the **Apple Vision Pro**, promised for sometime next year at a price starting at $3499. First, I want to explain what it is, both in terms of how we talk about it and its physical construction. Then I'll segue into thoughts about what you can do with it and for whom it's best suited. Finally, I want to explore some deeper social and societal issues surrounding a device that enables the wearer to experience a different reality than those around them. If you want to read more, I also link to first-impression articles from journalists who received a 30-minute demo from Apple at WWDC.

What Is the Vision Pro?

This question is not easy to answer. Apple calls the Vision Pro a "spatial computer," which is an unusual but reasonably accurate description of what the company believes the Vision Pro will do. First and foremost to Apple, the Vision Pro is a computer, one on which you perform computer-like tasks. Of course, Apple is thinking about a modern "computer," which encompasses nearly any digital device whose functionality is determined by apps rather than hardwired. The Mac is a computer, of course, but so are the iPhone, iPad, Apple Watch, and Apple TV.

Where things get tricky is with the "spatial" bit. What Apple seems to mean by that is that you interact with your apps—whether they're showing photos, displaying text, coordinating a video call, playing video, or immersing you in a game—in what appears to be the space around you. From your perspective as the wearer of a Vision Pro, apps float in the air in front of you, with the room behind them. Or they take over your visual space entirely, obscuring the physical world.

The rest of the world is calling the Vision Pro a "mixed-reality headset" or "XR headset." Until writing this, I was under the misapprehension that "mixed" meant a mix of "augmented reality" and "virtual reality." And XR is short for "extended reality." Let's unpack those terms so we're all on the same page:

- **Augmented reality** overlays virtual information on the real world. Think of Pokémon Go (see "**What the Heck Is Pokémon Go?**," 17 July 2016). With the Vision Pro, that's limited to visual and auditory content, although perception through touch, smell, temperature, proprioception, and more are theoretical possibilities.
- **Extended reality** seems to be a catch-all term that bundles augmented reality, mixed reality, and virtual

SIG News

The Saturday SMMUG Special Interest Group (SIG) will meet from 10:00 AM to 12:00 Noon, Saturday, July 8,, 2023, via a ZOOM video conference. FYI: An email containing the the Meeting ID and password will be sent to all members.

The meeting will be divided in to two parts. The First part starting at 10:00 will focus on Keychain and Password Managers. Starting at 11:00 it will focus on iOS, helping everyone become both comfortable and proficient with their iPhone, iPad, and iPod mobile devices.

All are invited, but new users are especially encouraged to attend this meeting. Bring your tips and tricks, questions and suggestions.

Go to: **https://www.smmug.org/meeting-info** to find the instructions for attending our ZOOM meetings.

For more information about Special Interest Groups (SIGs), go to the **SMMUG website**.

Scan this QR code to be taken to our SMMUG web site

MEETING DATES

Our regular monthly meetings are on the second Monday of every month. Upcoming meeting dates are as follows:

Jul 10, 23
Aug 14, 23
Sep 11, 23
Oct 9, 23
Nov 13, 23
Dec 11, 231

Our regular monthly **SIG meetings** are on the second Saturday of every month. Upcoming meeting dates are as follows:

Jul 8, 23
Sep 9. 23
Oct 14, 23
Nov 11, 23

MISSED AN ISSUE?

You can find the previous issues of the Silicon Summit posted in PDF format at the **SMMUG website**.

THIS MONTH AT SMMUG

July 13, 2023
6:00 Q&A Session
6:45 Networking Break
7:00 WWDC23 presentation by Jim Johnson
8:00 Adjourn

Future Meetings:
August: Annual Pizza Party!

Club News

Announcements

Head's-up: No Zoom meeting in August! Instead we will meet for our annual pizza party. Set your calendars so you can join. BTW: A new location might be booked so watch for the email notice that will be sent out before the meeting for the party location.

Door Prizes For The July Meeting:

 $10 Apple gift card
SanDisk 1TB Extreme Portable SSD Drive

reality.

- **Mixed reality**, though often used synonymously with augmented reality, allows real and virtual elements to interact and enables the user to interact with virtual elements as they would in the real world. In short, it's **more interactive**.
- **Virtual reality** is a simulated experience that puts the user into a fully immersive, computer-generated digital world.
- For the Vision Pro, both mixed reality and extended reality turn out to be accurate terms. Although virtual reality would seem to describe the full immersion mode of the Vision Pro, there's some disagreement from the journalists who were given demos if that truly applies, or if you're always somewhat aware of your surroundings.

Finally, although Apple is studiously avoiding the term "headset," it too seems reasonable, given the now-common terminology in the VR world for a head-mounted device that covers the eyes. I can't think why Apple would be perturbed by it, and it's a far more fluid and descriptive term than "spatial computer." No one is ever going to say that without air quotes.

So What, Physically, Is the Vision Pro?

Right, let's get back on track. The Vision Pro has four primary pieces.

Here's how Apple describes each one, with additional commentary:

- **Enclosure:** *A singular piece of three-dimensionally formed laminated glass flows into an aluminum alloy frame that curves to wrap around your face.* The bulk of the Vision Pro's technology is here. For those who wear glasses, Zeiss optical inserts customized with your prescription magnetically attach to the interior lenses. They'll cost extra, and you'll have to remove and replace your glasses for each session.
- **Light Seal:** *The Light Seal gently flexes to conform to your face, delivering a precise fit while blocking out stray light.* It magnetically attaches to the aluminum frame, and the word from some early tests is that Apple has more work to do in customizing Light Seals for different head shapes. It's unclear if the Vision Pro will be shareable, but if so, each person would probably need their own Light Seal.
- **Head Band:** *The Head Band provides cushioning, breathability, and stretch. The Fit Dial lets you adjust Vision Pro precisely to your head.* It sounds great, but many of those testing the review units reported discomfort after use. Apple said nothing about the size range, so it will be interesting to see if some people's heads are too small (likely children, also unmentioned) or too large.
- **Power:** *The external battery supports up to 2 hours of use, and all-day use when plugged in.* I can't decide whether 2 hours is way too little, such that you'd need to tether yourself to a power outlet, or more than enough because no one will want to wear one for even that long. Some movies are more than 2 hours long, though. The battery will also be harder to manage for women whose clothes less commonly have pockets.
  So what's in that enclosure that consumes so much power?
- **M2 and R1 chips:** Apple's M2, the same chip that's in the MacBook Air and Mac mini, runs a new visionOS that manages everything. An all-new R1 chip processes input from the Vision Pro's cameras, sensors, and microphones and streams the data to the displays within 12 milliseconds. A thermal system keeps everything cool, presumably without making any noticeable noise.
- **Displays:** Each eye gets its own micro-OLED display with more pixels than a 4K display, or 23 million in total. Apple says a custom three-element lens creates the feeling of a display that's everywhere you look. From the sound of that, maybe everything would be in focus all the time, which would be a boon for those of us whose aging eyes are on the downhill slope.
- **Dual-driver audio pods:** In other words, they are speakers next to each ear that provide audio while not blocking ambient sound from the room. Spatial audio supposedly makes the sounds seem to come from where they emanate from avatars and virtual objects. AirPods are also supported when you don't want to leak sound around you.
- **Eye-tracking system:** A set of LEDs and infrared cameras positioned around each eye's screen project invisible light patterns onto your eyes, enabling the Vision Pro to track what you're looking at precisely, a vital part of the interaction model. To select something, you merely look at it.
- **Sensor array:** Numerous sensors, including the LiDAR Scanner, TrueDepth camera, and infrared flood illuminators, are positioned around the front and bottom lip of the enclosure to provide precise head and hand tracking, plus 3D mapping to understand your hand gestures, the other central part of the interaction model. Two high-resolution cameras transmit video—over 1 billion pixels per second—to the displays to render the world around you.

While much of this technology sounds like the **flux capacitor** from *Back to the Future*, it's very much real. Apple said it applied for 5000 patents based on the hardware in the Vision Pro.

We may blanch at the $3499 starting price, but it doesn't seem unreasonable considering everything Apple put in—especially the custom hardware. In terms of current hardware, the Vision Pro would seem to be more than the equivalent of an M2 Mac mini with a pair of 4K displays, backed by the kind of sensor array and cameras you find only in the iPhone 14 Pro.

It's worth noting that all this hardware isn't light. Apple hasn't said how heavy the Vision Pro will be, but testers were told that it was about a pound (0.45 kg), and one wrote that he felt it was more like 1.5 pounds (0.68 kg). Hard hats and bike helmets are generally under a pound and don't put most of their mass on your face. Even beyond the comfort questions—a number of the testers had issues—will you end up with red marks on your face after you take the Vision Pro off? Joanna Stern of The Wall Street Journal did.

What Can You Do with the Vision Pro?

Next up is the interesting question of what the Vision Pro is actually useful for. All we have to go on is what Apple shared in the WWDC keynote film and with journalists afterward. However, Apple clearly chose WWDC to unveil the Vision Pro because it wanted to seed developers' imaginations with possibilities.

That's good because Apple's examples aren't particularly compelling. Apple even says, "So you can do the things you love in ways never before possible." In short, the Vision Pro is just another way to do what you already do. That's a dangerous path to head down because what we already do involves the Mac, the iPhone, the iPad, the Apple Watch, the Apple TV, the HomePod, and the AirPods. Is Apple really setting the Vision Pro up to replace everything else in its lineup? The company hasn't been afraid to cannibalize its own product lines—the iPhone ate the iPod for lunch—but it's still a bold claim. Nonetheless, Apple's existing product lines don't have much to worry about for the near future.

Apple's main demos fit into five categories:

- **Work:** The Vision Pro will have native apps, for which it will have its own App Store, and you'll be able to use many (but not all) iPhone and iPad apps, each running its own window. The Vision Pro can also create a virtual screen for a Mac, and you can continue to use your Mac's keyboard and trackpad on that virtual screen. Those who have tried the Vision Pro say that text is crisp and readable, and it's easy to position windows as desired. And while using it as a large Mac display while traveling is unquestionably valuable, it's hard to imagine it being that much better than a Studio Display when working in your office.

- **Communicate:** Apple is pushing FaceTime, of course, but there's an interesting caveat. No one wants to look at you wearing a Vision Pro, so as part of the setup process, you scan your face to create a digital avatar. Reports say the avatars are remarkably good but still clearly fake—it doesn't sound like Apple has avoided the **uncanny valley**. That will be all the more true with people you know well. More generally, although video calls have become commonplace, I still find audio-only calls easier to set up and equally effective for most conversations. And video calls haven't cut into the popularity of text messaging for short communications,

so it's hard to see the Vision Pro supplanting the iPhone as the default communications device for users.

Watch video: The killer feature of the Vision Pro is probably watching TV and movies: regular 2D content, 3D movies, and specially filmed Apple Immersive Video that offers 180-degree, high-resolution recordings with spatial audio. Watching sports filmed in Apple Immersive Video is reportedly impressive because it can put you much nearer the field of play. A Vision Pro may make for a legitimate personal home theater.

- **Play games:** I don't play video games, so I'm speaking only speculatively, but if the Vision Pro's eventual performance matches what Apple's demos showed, it could be a decent gaming rig. Gamers already spend big bucks on hardware, so the question is if the most desirable games would be ported to the Vision Pro.

- **Reminisce:** Finally, Apple emphasized that you can use the Vision Pro to capture, view, and share 3D photos and videos. Once again, that's technically impressive, though it seems likely such a capability will eventually come to the iPhone as well. Are such photos and videos game-changing, though? And will someone rush to put on their Vision Pro to capture that special moment when it's easier to pull an iPhone out of a pocket?

To loop back to the question of what the Vision Pro is, one thing that emerges from many of Apple's demos is that the Vision Pro is, in many ways, the ultimate screen. (Whenever Apple breathlessly talks about it being 4K, I immediately think of the 5K iMac screens I've been using since 2014 and wonder if it's as good.) Technically nifty though it may be, floating a virtual screen in a room doesn't seem like compelling mixed reality for everyday use.

Examples of more ambitious uses of the Vision Pro were limited to quick looks at a 3D view of the human heart, a 3D collaborative design review tool, a way of reviewing and approving production lines, a spatial interface for DJ-ing, and a simulated planetarium. Most of these took place in the user's physical space, and none interacted with the space or real objects in any interesting way. Nor did any augment the user's senses or capabilities— could a Vision Pro app give you superhuman vision or point to where a sound is coming from? Will the Vision Pro have a killer app, or will Apple's basics be sufficient for most people?

The virtual elephant in the room is porn. Adult filmmakers are already applying for developer units, and the Vision Pro is the ultimate personal

peep show device. No one else can see the screen, and someone could be watching porn in a window while in a room with other people—there's no way to know. Apple will undoubtedly reject apps that would attempt to do creepy things like replacing a real-world person's body with a naked version, but sex comes to all technology, and Apple probably won't either choose to or be able to block it all.

We also probably won't see apps that are primarily used outside. Along with all the social and battery constraints, it seems unlikely that the Vision Pro would withstand rain. So the desire for AR glasses that superimpose turn-by-turn navigation on the real world while you walk outside may stay unrealized for some time.

Finally, an open question is if the Vision Pro's version of Safari will enable users to see and interact with 3D content on Web pages. 3D objects can be embedded in Web pages now, and more ambitious integration of 3D capabilities is getting started with projects like **WebXR**.

Who Would Use the Vision Pro, and How?

Are you thinking that these use cases aren't the sort of thing you'd pay $3500 for? You're far from alone. The Vision Pro makes more or less sense depending on your situation. I'm going to make some assumptions here, but based on numerous conversations over the past few days, I think they're warranted:

- Many people won't like wearing the Vision Pro around others, much less in public.
- Many people will find it off-putting to have someone else wearing a Vision Pro in their presence.
- Most people won't find that the Vision Pro makes them more productive than working on a Mac, iPhone, or iPad.
- Many people won't find the Vision Pro sufficiently comfortable for long periods or in warm environments.
- Most people will consider the price too high without a compelling use case.

Those assumptions start to paint a picture of the Vision Pro's environmental requirements. If people find wearing the Vision Pro around others awkward, embarrassing, or dangerous, they'll need a cool, comfortable room to themselves. For entertainment purposes, that points more toward people who live alone or can at least spend a lot of time alone. For work, those with remote jobs could use it much more easily than those who interact with colleagues in an office environment. One of Apple's video examples notwithstanding, a private office would probably be more comfortable than an open layout.

On the usage side, if the Vision Pro is mainly for watching videos, it's either a lot more expensive than the TV you already have or a reasonable alternative to a home theater. Ditto for gaming. Either way, it's challenging to imagine it being more productive for work than the devices we have years of experience using, at least with the same apps. Innovative new uses would change the equation, such as a medical student being able to scrub back and forth in time through a 3D video of a complicated surgery close up and from multiple angles. Or, imagine a repair app that would show how to disassemble common appliances, exploding each piece in a 3D view.

Until a compelling use case justifies the $3499 price, the Vision Pro will largely be a toy for those whose financial situation makes the cost irrelevant. That will focus the market—and perhaps app prices—on niches where a business model can be developed around a small audience. There's nothing wrong with that, but it's an unusual approach for a mainstream company like Apple.

Putting all this together, the ideal audience would seem to be a single person who lives alone, works remotely, is involved in pop culture and gaming, and has disposable income. To me, this sounds a lot like a 20-something techie. I know nothing about the makeup of the Vision Pro design and engineering teams, but I suspect many of their members fit squarely in that demographic and built the Vision Pro for themselves.

What about other groups?

- Parents I've spoken with recoiled in horror at the idea of children and teens having a Vision Pro—if you think screen time is problematic on an iPhone or iPad, just wait until it's an addictive immersive experience and there's literally no way to see what someone is doing. Apple said nothing about children using the Vision Pro, but wealthy teens will undoubtedly end up using them. (For porn. With a nod to **Avenue Q**.)
- Parents also acknowledge that their own use of digital devices is often at odds with effective parenting—that's why they ban

phones for everyone at the dinner table. So they—at least the good ones—would be uncomfortable setting a bad example by using the Vision Pro when they should be paying attention to their kids. A number of the Vision Pro videos were cringeworthy in that respect.

- Couples without children in the house often spend significant time together in person, even when watching TV, and one may see the Vision Pro as harmful to the relationship, especially if there's a difference in tech savviness. Regardless of perception, it seems likely that the Vision Pro could be divisive unless its use were carefully considered.
- Those who work in offices were highly uncomfortable with the idea of wearing a Vision Pro where colleagues could see. It throws financial and class differences in people's faces.
- Ironically, the Vision Pro's interaction model might work well for an older person who lives alone and has trouble with modern technology, but if the reactions I'm hearing are any indication, such people can't imagine themselves adopting such a radically different device.
- For people with disabilities that make it difficult or impossible to use a mouse or trackpad, the Vision Pro's gaze-tracking and simple gesture control may be more beneficial than—or a good alternative to—other computing devices.

Apple talked a little about how the Vision Pro uses Optic ID, a Face ID-like system that scans the iris, to authenticate the user, but there was no mention of multi-user access. I'd argue that would be helpful so owners can show it off and so family members can share it. Of course, that raises other issues, such as needing separate lenses and Light Seals, and while buying them might not be cheap, it would be less than buying another Vision Pro.

Social and Societal Implications of the Vision Pro

I didn't dive into these criticisms from the start so they would be grounded in an acknowledgment of the Vision Pro's possibilities and Apple's technical achievements. But I use the phrase "deeply ambivalent" in the title of this article because much about the Vision Pro concerns me, should it become anywhere near as popular as the iPhone.

Given Apple's technical and marketing prowess, I think the Vision Pro—or a second or third non-Pro version that's smaller and cheaper—stands a good chance of succeeding. That's not necessarily a bad thing, even given my criticisms below. Of all the companies that could create such a device, I'd far, far rather have the privacy-driven Apple do it than the likes of Meta, with its desire to track and monetize its users' every action. There are also positive possibilities, such as for users with certain disabilities.

The Vision Pro will hamper in-person social interaction

Putting a Vision Pro on your head cuts you off from the real world. That has been a huge problem for VR headsets, so Apple went to great lengths to minimize the effect with technical wizardry. For instance, cameras on the bottom of the enclosure mean you can look down to see the coffee table and avoid barking your shins as you stand up from the couch. Even when you're in a fully immersive view, if someone walks into your field of vision, they fade into your view in the Vision Pro so you know they're there. More impressive yet, the Vision Pro displays your avatar's eyes on a front-facing screen, giving those outside the sense that they're seeing your eyes through the Vision Pro.

Despite all this, there's no escaping the fact that you're wearing something that looks like oversized ski goggles. One could argue that we would become accustomed to it. After all, we got used to face masks during the pandemic, but when you see someone in a mask, you probably still make assumptions about them, some of which may not be positive. I suspect the same will be true of the Vision Pro.

Some have raised the AirPods as another example of a visually apparent technology that cuts the wearer off from others in their vicinity. While the analogy holds, the AirPods are far less obtrusive, and most people take them out to indicate that they're paying attention to others around them.

Plus, I find it off-putting when running to pass people wearing AirPods since they eliminate any chance to connect as people, even if it's merely saying hello. These small, positive interactions create "**weak ties**" that are an important component of mental health. And yes, I do still smile or wave. Similarly, Tonya reports that it's frustrating when cycling on a bike path to pass dog walkers so tuned into media that they don't hear her bike bell and ensure the leash won't tangle with her bike. Tuning out the real world creates an annoyance for everyone.

The Vision Pro will break shared spaces and reduce togetherness

What about the effect of one or more people in an in-person group wearing a Vision Pro? As with the AirPods, I worry that the sense of togetherness and connection would be reduced. When people get together in person, the same aspects of the real world are available to all. Not everyone may be able to see, hear, or smell precisely the same things or may perceive them in the same way, but the opportunity is there.

Not so with the Vision Pro. As soon as anyone is wearing a Vision Pro, they could be seeing something completely different. You know how irritating it is to be in a group where other people aren't paying full attention because of using their phones? With the Vision Pro, it may not be quite so glaring that someone isn't tuned in, particularly if their avatar eyes remain focused on other people, but I suspect it will still be noticeable.

It could be argued that the concept of togetherness is a social construct that will evolve to meet new technology. But it's easy to find **research into how smartphone use is detrimental during social interactions**. Given the obtrusiveness of the Vision Pro, it's hard to imagine that it won't be at least as bad as the smartphone, and likely worse, when it comes to damaging both group and intimate relationships.

The Vision Pro will encourage social isolation

This concern is partially an extension of what we've already seen with the smartphone and the logical next step of the last two worries. If the Vision

Pro offers a gorgeous, immersive environment far nicer than the real world with its mess, dirt, and noise, won't people want to spend more time there? It might even be legitimately more productive sometimes; we all seek to block out distractions to focus on work.

But escapism has dangers that start with reduced in-person interaction, which has significant implications for mental health. Yes, virtual interaction can be a big win, and it's certainly better than nothing, but it's not a substitute. Worse, the more that people can withdraw from the real world, the less effort they're willing to put into improving it. That's true at the individual and environmental levels. Why bother cleaning up when you can dial in an immersive environment to block out the mess? Why get involved with a neighborhood beautification group or an environmental protection organization when gorgeous natural scenery is available anytime in your Vision Pro?

The Vision Pro could cause health problems

Earlier in the WWDC keynote, Apple announced it was adding features to iOS 17 and watchOS 10 to help users improve mental and vision health.

Although the new features surrounding mental health are mostly about logging and reflecting on emotional states, there's lots of research about how social interactions are essential for mental health—just look at what happened during the pandemic. Similarly, an increasing body of research shows that exposure to **nature is good for mental and physical health**, particularly when coupled with exercise. But the more compelling the Vision Pro, and the more time people spend using one, the less time is available for social interactions or just being outside.

On the vision health side, Apple is adding a feature to help reduce the increase in myopia by helping parents encourage children to spend more time outside—doctors recommend 80–120 minutes per day. To that end, the Apple Watch will measure and report on time spent in daylight. Another behavior that can cause myopia is reading at too close a distance. Apple's new Screen Distance feature works to increase the distance at which people view things like devices and books. It's great to see Apple focusing on improving health in these ways, but doesn't the Vision Pro, by encouraging prolonged indoor use and placing screens directly in front of the eyes, directly counter these efforts?

Finally, although a few of Apple's demos showed people standing up, most were sitting or lying down while using the Vision Pro. That isn't much different from today's devices, but it doesn't seem like the Vision Pro will encourage or even be usable during exercise. Even if it was usable only indoors, it could still provide an immersive experience while riding a stationary bike and using Zwift, say. But can it handle sweat?

The Vision Pro is a glaring statement of privilege and class

Would you walk around in a jewel-encrusted tiara or gold crown? People flaunt wealth all the time with designer clothes, expensive watches, and fancy jewelry. That's their prerogative, certainly, but expensive clothes, watches, and jewelry can be faked, so at a glance, it's hard to tell if that watch cost $5000 from Rolex or was picked up for $5 from a street vendor. There won't be any faking a Vision Pro—wear one and you'll be broadcasting particular facts about yourself.

The Vision Pro could help people with certain disabilities

The Vision Pro's new gaze- and gesture-based interaction model could be helpful for people with certain disabilities. **Eye-tracking** has long been used by those with motor or rehabilitative disabilities (ALS, cerebral palsy, paralysis, spinal cord injury, etc.), and the Vision Pro likely offers more accurate and more tightly integrated eye tracking than other solutions. Plus, while the Vision Pro's gestures do require some muscular control, they need far less movement and potentially less coordination than a mouse or trackpad.

Apple may not have an accessibility story for the Vision Pro at launch, but given the company's accessibility efforts in its other operating systems over the years, I would be surprised if there aren't plans to offer gaze-only options, such as with **Dwell Control**, which performs specific actions when the cursor is held still for a specified time. Since the Vision Pro supports game controllers, it seems likely that it could work with a **sip-and-puff controller**.

In-person Impressions

After the WWDC keynote, Apple gave some journalists 30-minute demos of the Vision Pro. None were allowed to take photos or videos apart from **Good Morning America**, which also scored an interview with Tim Cook. As you might expect, the video of GMA host Robin Roberts using the Vision Pro is boring—watching someone sit on a couch wearing a headset is not compelling TV. Nonetheless, it was interesting that Apple chose to give a mainstream show like Good Morning America an exclusive interview about an expensive tech product that won't ship until next year.

All the reports I've read or seen from those who received Vision Pro demos were positive—the technology blew everyone away. But experiences differed, with some people finding it more or less comfortable, and what reviewers chose to focus on varied as well. But nearly everyone expressed some level of dismay at the price, particularly in relation to the question of what the Vision Pro will be able to do that existing devices don't already handle acceptably. For the answer, we'll have to wait until the launch.

- **Ars Technica (Samual Axon)**
- **Daring Fireball (John Gruber)**
- **David Pogue**
- **MKBHD (Marques Brownlee)**

Apple plans to ship the Vision Pro "early next year," at which point everyone can try one at an Apple Store. Then you can decide if you want one enough to spend $3499—or perhaps $4000 after special lenses, sales tax, and AppleCare.

Reassessing after the second or third release might be the smart thing to do. The original iPhone, iPad, and Apple Watch feel dated today, and for those who aren't interested in watching movies, playing games, or experimenting with the latest tech, it's difficult to imagine what real-world problem the Vision Pro solves. By then, we'll also have a sense of how Apple has addressed social and societal concerns to keep the Vision Pro from playing a role in a ***Ready Player One***-like dystopia.

iOS, watchOS, & tvOS

Beware of Siri Creating Alarms Instead of Timers

by ADAM ENGST

I regularly use timers on the Apple Watch to remind myself about cooking times, ensure I don't miss a meeting (see "**A Call to Alarms: Why We Need Persistent Calendar and Reminder Notifications**," 11 May 2023), track how long to hold or repeat various exercises, remember to move the laundry along, avoid overdoing it by splitting wood for too long, and much else. My command is always the same: "Set a timer for 20 minutes" or whatever length of time I desire.

A timer failing to go off can be a real problem. Food might burn, I might be late, or the people performing a thoroughly evil core exercise with me might revolt. That's happened more frequently in the past few months, but I didn't know why until recently.

The first clue came when alarms started to go off on my Apple Watch every so often. That's unusual; I seldom set alarms, and when I do, it's always on my iPhone, not the Apple Watch. I didn't think too much about the spurious alarms, chalking them up to cosmic rays.

The explanation came from **a blog post by my friend Paul Kafasis**. Paul had noticed the same problem, but he realized what was happening because he was paying closer attention to Siri's visual feedback on the Apple Watch.

Something has recently changed with Siri such that it occasionally misses the final word—usually "minutes"—in the standard command, turning "Set a timer for 20 minutes" into "Set a timer for 20." I have become so accustomed to timers just working that I hadn't been looking at the screen like Paul had, so I didn't notice that Siri interprets that second command as a request to set an alarm for "20" (8 PM.) As you can see from the scrollbar in the third screenshot below, I've ended up with a slew of random alarms in the Apple Watch's Alarms app.

They're a little annoying to delete, too.

You have to tap each one, scroll down, and tap Delete. I was hoping there would be a long swipe to the left, but I discovered an even better way, which was to tell Siri, "Delete all my alarms." Way to go nuclear, Siri.

Initially, the fix eluded me because the command is correct—Siri is just missing that final word for some reason. However, I discovered other ways to ensure that Siri sets a timer rather than starting an alarm:

- If you can retrain your brain to change your timer invocation command, rephrase it to move the unit to the middle, where it can't be missed. In other words, say, "Start a 20-minute timer" or even just "20-minute timer." Thanks to early commenters for this suggestion.
- Look at the watch face after you speak your command to confirm Siri's action. The screens for timers and alarms are visually distinct, so it's an easy difference to spot.
- Turn on Siri's spoken responses, captions, and the transcription of your speech in Watch > Siri > Siri Responses. I've never felt these were necessary before (and the responses grate quickly), but they should reduce the chance of missing Siri's mistakes.

Apart from the announcement that you'll have the option of dropping "Hey" from "Hey Siri" commands, Apple said very little about Siri at WWDC, so it seems unlikely that significant under-the-hood improvements are coming this year. Nonetheless, we hope Apple addresses at least this problem soon because it's exacerbating an already somewhat fraught interaction method.
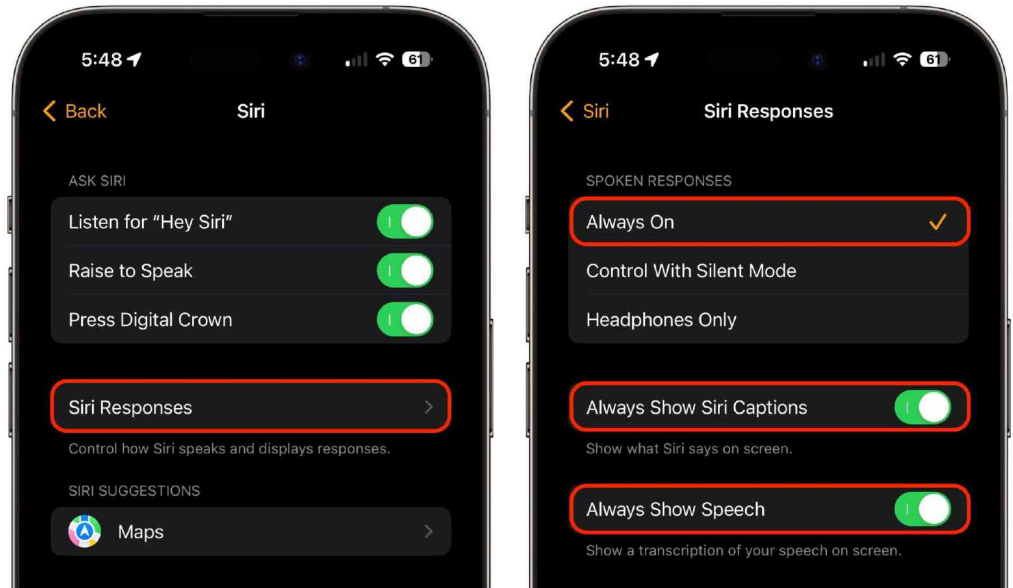
Solve Myopia in a Pinch with an iPhone

by ADAM ENGST

The discussion of how Apple's Vision Pro puts a little screen in front of each eye reminded me of a neat discovery I made a while ago: if you're nearsighted, you can use an iPhone to stand in for your glasses and even see in the dark.

Until several years ago, I wore contacts to correct my myopia, switching to glasses every night at bedtime. One night, after I had taken my contacts out, I realized my glasses were somewhere downstairs because I'd been traveling and hadn't yet fully unpacked. Although I can see well enough to navigate the house—I'm fine with large shapes and colors—I would have had difficulty finding glasses on a table or counter, especially in a dimly lit room. Between the clear lenses and thin metal frames, there's just not much to see.

That was when I had my brainstorm. I see perfectly at about a hand's length from my face. Though problematic for everyday life, that's helpful for close-up work on electronics or other small objects, and I also often read in bed without glasses using my iPhone, which is easy to hold at that distance.

My contacts were off, I needed to go downstairs to find my glasses, and my iPhone was at hand. I opened the Camera app and held the iPhone in front of my face so the viewfinder was in focus. Looking around with the iPhone blocking my eyes felt odd, but it worked like a charm. To avoid having to turn all the lights on and off (this was before I had wired them all up with HomeKit-compatible switches), I switched to Video mode, swiped up on the image to display the controls, tapped the Flash button, and locked the setting to Flash On.

With my ad hoc night-vision goggles in play, I walked downstairs and wandered around the darkened house until I found my glasses. For giggles, I even zoomed the view a few times to see something better than I would have been able to otherwise. I felt like a cyborg.

This screenshot shows what I see on the iPhone screen, which is myself in a mirror so you can see how I have to hold the iPhone.

I haven't needed to use the iPhone like this again. In 2020, I got tired of having to switch between multiple pairs of glasses over my contacts for reading, driving, and bright sunlight, so I got a single pair of photochromic progressive glasses that work for everything and are with me at all times. But I've always remembered just how well the iPhone hack worked and thought that if I was ever in a situation where my glasses were broken, it might be a lifesaver.

In some ways, the Vision Pro is the ultimate version of this hack, combining as it does forward-facing cameras and screens right in front of your eyes. Although Apple has optional Zeiss lenses for those who wear glasses, it's unclear if they'd be necessary for those of us whose eyes focus at the distance of those screens. We'll know eventually.

The idea isn't new, I discovered. The 2015 research paper "**ForeSee: A Customizable Head-Mounted Vision Enhancement System for People with Low Vision**" by Yuhang Zhao (Tsinghua University), Sarit Szpiro (Harvard Medical School), and Shiri Azenkot (Cornell Tech) proposes a head-mounted vision enhancement system that looks like it's **based on an Oculus Rift headset**. It doesn't seem to have gone any further, though.

The closest I could find to a head-mounted iPhone holder is the obsolete **Google Cardboard**, released in 2014. It provided a cardboard viewer into which you could slot an iPhone or Android smartphone for VR on the cheap. I even have one, but it lacks a head strap and has built-in lenses for 3D images. Google Cardboard was succeeded by **Google Daydream**, which does have a head strap but seems similarly obsolete. But both were focused on VR rather than vision enhancement.

However, since Google published instructions and templates for making your own Google Cardboard and **many other sites released their own versions**, it should be possible to create an iPhone-based vision enhancement system, complete with a head strap. I leave that as an exercise to the reader and will award bonus points to anyone who does it and posts a picture. I'm particularly taken with the person who **repurposed his iPhone's box**.
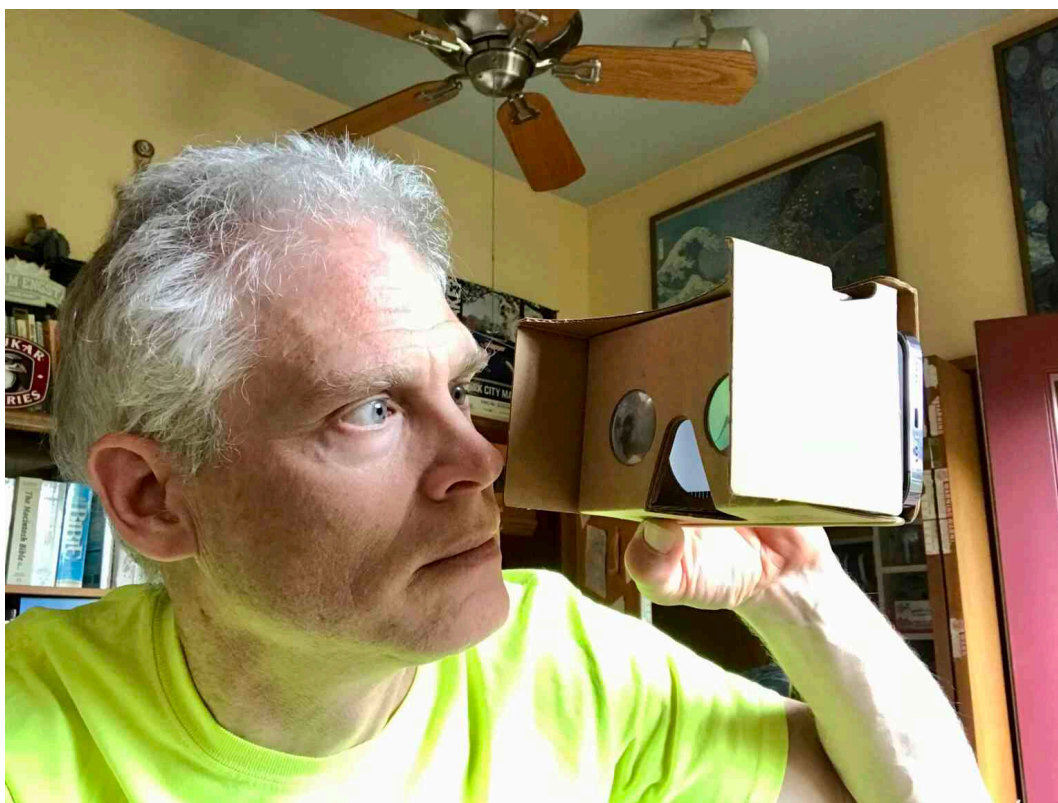
ExtraBITS

DPReview Acquired by Gear Patrol — Photography resource website DPReview has escaped the ignominious fate of being shut down in Amazon cost-cutting.

Tracking Air Quality in a Wildfire-Filled World — Stressed out by unhealthy air quality levels caused by smoke drifting south from wildfires in Canada, Adam Engst explores resources that report outdoor and indoor air quality to inform decisions about how to react.

Macs & macOS

The Real System Requirements for Apple's 2023 Operating Systems

by ADAM ENGST

Apple has released developer betas of macOS 14 Sonoma, iOS 17, iPadOS 17, watchOS 10, and tvOS 17, with public betas coming soon and releases likely in September or October of this year. As those releases draw near, many people are wondering whether their current hardware will run the new operating systems, or if it's time to upgrade. Overall, the news is good: Apple has deprecated only five Macs (in three product lines) from 2017, three iPhones from 2017, and three iPads from 2015, 2016, and 2017.

However, just because a 10.5-inch iPad Pro can run iPadOS 17 doesn't mean it will have access to all the new features. I'll first look at the basic requirements for each operating system and then dive into which features have more specific hardware requirements.

macOS 14 Sonoma Requirements

Here are the Macs that can run **macOS 14 Sonoma** compared to those that support macOS 13 Ventura. As noted, Apple has trimmed five older models: two iMacs, two MacBook Pros, and the final MacBook.

To sum up, then, the following Macs—all released in 2017—were compatible with Ventura but cannot run Sonoma:

- iMac (21.5-inch and 27-inch)
- MacBook Pro (13-inch and 15-inch)
- MacBook (12-inch)

Mac	Supported in Sonoma	Supported in Ventura
iMac	2019 and later	2017 and later
iMac Pro	2017	2017
MacBook Air	2018 and later	2018 and later
MacBook Pro	2018 and later	2017 and later
Mac Pro	2019 and later	2019 and later
Mac Studio	2022 and later	2022 and later
Mac mini	2018 and later	2018 and later
MacBook	None	2017

iOS 17 Requirements

The situation is similar for **iOS 17**. It supports every iPhone model released since 2018, though not 2019's seventh-generation A10 Fusion-based iPod touch, which Apple dropped a year ago (see "**Apple Officially Discontinues the iPod touch**," 11 May 2022). The table includes the chip powering each iPhone for reference.

The devices that supported iOS 16 but can't upgrade to iOS 17 include just these A11 Bionic-powered models from 2017:

- iPhone X
- iPhone 8/8 Plus

iPhone	Introduced	Chip
iPhone 14/Plus/Pro/Pro Max	2022	A15 Bionic / A16 Bionic
iPhone 13/mini/Pro/Pro Max	2021	A15 Bionic
iPhone 12/mini/Pro/Pro Max	2020	A14 Bionic
iPhone 11/Pro/Pro Max	2019	A13 Bionic
iPhone SE (2nd generation or later)	2020	A13 Bionic
iPhone XR/XS/XS Max	2018	A12 Bionic

i
PadOS 17 Requirements

For iPad models that can run **iPadOS 17**, there are several discrepancies between what Apple says on the main iPadOS 17 page and the actual situation. That page claims, "iPad Pro (2nd generation and later)," but both footnotes later on that page and available developer betas confirm that the iPad Pro 11-inch (1st generation) and the iPad Pro 10.5-inch are supported.

The iPad Pro 12.9-inch (1st generation) still doesn't make the cut. Both it and the iPad Pro 9.7-inch rely on the A9X chip, so it's no wonder they're not supported. The A10X Fusion becomes the oldest supported chip, which is notable because Apple decreed for iOS 17 that even the newer A11 Bionic was insufficient, but iPadOS 17 supports some models powered by the earlier A10 Fusion

iPadOS 17 beta

Note: For devices running iPadOS 16.4 or later, go to Settings > General > Software Update > Beta Updates and choose the Developer beta to install this software. Before testing your software on your device, make sure to enable Developer Mode in Settings > Privacy & Security.

Released
June 5, 2023

Build
21A5248v

Download Restore Images ⊕   Hide all ⌃

- **11-in. iPad Pro (4th generation), 12.9-in. iPad Pro (6th generation)**
  21A5248v
- **10.2-in. iPad (10th generation)**
  21A5248v
- **iPad Air (5th Generation)**
  21A5248v
- **iPad mini (6th generation)**
  21A5248v
- **10.2-in. iPad (9th generation)**
  21A5248v
- **11-in. iPad Pro (3rd generation), 12.9-in. iPad Pro (5th generation)**
  21A5248v
- **iPad Air (4th generation)**
  21A5248v
- **10.2-in. iPad (8th generation)**
  21A5248v
- **11-in. iPad Pro (1st and 2nd generations), 12.9-in. iPad Pro (3rd and 4th generations)**
  21A5248v
- **10.5-in. iPad Pro (1st generation), 12.9-in. iPad Pro (2nd generation)**
  21A5248v
- **iPad (6th generation)**
  21A5248v
- **iPad mini (5th generation), iPad Air (3rd generation)**
  21A5248v
- **10.2-in. iPad (7th generation)**
  21A5248v

and A10X Fusion chips.

Perhaps there are other specs more important than the chip generation for iPadOS 17, or maybe some iOS 17-only features require higher-performance chips.

Device	Introduced	Chip
iPad Pro 12.9-inch (2nd–6th generation)	2017, 2018, 2020, 2021, 2022	A10X Fusion, A12X Bionic, A12Z Bionic, M1, M2
iPad Pro 11-inch (1st–3rd generation)	2018, 2020, 2021	A12X Bionic, A12Z Bionic, M1
iPad Pro 10.5-inch	2017	A10X Fusion
iPad Air (3rd–5th generation)	2019, 2020, 2022	A12 Bionic, A14 Bionic, M1
iPad (6th–10th generation)	2018, 2019, 2020, 2021, 2022	A10 Fusion, A10 Fusion, A12 Bionic, A13 Bionic, A14 Bionic
iPad mini (5th & 6th generation)	2019, 2021	A12 Bionic, A15 Bionic

The iPad models that could run iOS 16 but don't support iOS 17 are:
- iPad Pro 12.9-inch (1st generation)
- iPad Pro 9.7-inch
- iPad (5th generation)

watchOS 10 Requirements

Apple didn't change the basic system requirements from watchOS 9 to **watchOS 10**, which means that these Apple Watch models can all upgrade:
- Apple Watch Ultra
- Apple Watch Series 8
- Apple Watch Series 7
- Apple Watch Series 6
- Apple Watch SE
- Apple Watch Series 5
- Apple Watch Series 4

Two features that debuted in watchOS 9 presumably still require specific Apple Watch models:
- Apple Watch Mirroring, an accessibility feature that lets you control an Apple Watch from an iPhone, requires an Apple Watch Series 6 or later.
- The onscreen keyboard supports more languages—French, German, Italian, Japanese, Portuguese, and Spanish—when running on an Apple Watch Series 7 or later.

Compatibility By Feature

Overall, Apple does a good job of supporting older devices—2023's operating systems work on every device sold since 2018—a 5-year run. However, some of the otherwise supported devices lack the processing power or other capabilities necessary for new features, so Apple restricts such features to those that can handle them. It makes for a bit of additional confusion, but it's better than dropping support entirely. Here are the promised features that have more specific hardware requirements.

Adaptive Audio: AirPods Pro, iPhone, iPad

The Adaptive Audio feature that **switches between Noise Cancellation and Transparency** based on the ambient sounds in your environment works with all iPhones that can run iOS 17 and all iPads compatible with iPadOS 17, but on the AirPod side, it is limited to the AirPods Pro (2nd generation) with the latest firmware.

Control Video Framing: Mac

When you use a Studio Display or an iPhone as your camera for video on the Mac, you can **adjust the frame with zoom and pan controls**, or use Recenter to place yourself in the center of the frame. It works on any Mac but requires the processing capabilities of the Studio Display or iPhone.

Enhanced Autocorrect: iPhone, iPad

Apple says it **enhanced autocorrect to ducking work better**, and it **temporarily underlines autocorrected words** so you can easily see which were changed and revert as needed. It's available only in Arabic, Dutch, English, French, German, Hebrew, Korean, Italian, Polish, Portuguese, Romanian, Spanish, and Thai, and it works on all Macs running Sonoma. However, the iPhone and iPad support enhanced autocorrect only in English, French, and Spanish, and require:

- iPhone 12 or later
- iPad Pro 12.9-inch (5th generation and later), iPad Pro 11-inch (3rd generation and later), iPad (10th generation), iPad Air (4th generation and later), or iPad mini (6th generation)

External Display Camera Support: iPad

Using an **external display's built-in camera when attached to an iPad** requires an iPad Pro 12.9-inch (3rd generation and later), iPad Pro 11-inch (1st generation and later), iPad (10th generation), iPad Air (4th generation and later), or iPad mini (6th generation).

FaceTime on the Big Screen: Apple TV, iPhone, iPad,

To use an iPhone or iPad's camera and microphone for a **FaceTime call on an Apple TV**, you need:

- Apple TV 4K (2nd generation)
- iPhone XR/XS (all supported iPhones)
- iPad Pro 12.9-inch (3rd generation and later), iPad Pro 11-inch (1st generation and later), iPad (8th generation and later), iPad Air (3rd generation and later), or iPad mini (5th generation and later)

Game Mode: Mac

For those playing games on their Macs, **Game Mode automatically gives games top priority** on the CPU and GPU, lowering usage for background tasks. It also reduces latency for wireless accessories, like game controllers and AirPods, for improved responsiveness. It's available only on Macs with Apple silicon.

Inline Predictions: iPhone, iPad, Mac

I'm most accustomed to seeing **inline predictions as you type** in Gmail, where they're occasionally helpful on the iPhone because typing is so slow there. Apple's version is available in English on:

- iPhone 12 or later
- iPad Pro 12.9-inch (5th generation and later), iPad Pro 11-inch (3rd generation and later), iPad (10th generation), iPad Air (4th generation and later), or iPad mini (6th generation)
- All Macs

Made for iPhone Hearing Devices: Mac

Those who use Made for iPhone hearing devices can now **pair them directly with Macs**, but the feature seems to require significant processing power because it works only on the MacBook Pro (14-inch, 2021), MacBook Pro (16-inch, 2021), Mac Studio (2022), and all Macs with the M2 chip.

NameDrop: iPhone, Apple Watch

Apple's feature for **transferring contact information wirelessly** with just proximity works on any iPhone running iOS 17, but to communicate with an Apple Watch running watchOS 10, you need an Apple Watch SE, Apple Watch Series 6 or later, or Apple Watch Ultra. NameDrop is coming in an update later this year, so it won't be available at launch.

PDF AutoFill: iPad, Mac

You'll be able to **autofill contact information in a PDF form** with PDF AutoFill on any Mac running Sonoma, but on the iPad, the feature requires an iPad Pro 12.9-inch (3rd generation and later), iPad Pro 11-inch (1st generation and later), iPad Air (3rd generation and later), iPad mini (5th generation and later), or iPad (8th generation and later).

Point and Speak: iPhone

A new Point and Speak accessibility feature makes it easier for people with vision disabilities to **interact with physical objects that have text labels**, but it works only on the Pro models of the iPhone 12, iPhone 13, and iPhone 14.

Presenter Overlay: Mac

The new Presenter Overlay feature lets you **stay on screen while sharing your screen** on a video call, either in front of the shared screen or in a small movable bubble. Unsurprisingly, the amount of computation necessary for this trick requires a Mac with Apple silicon.

Press to Mute: AirPods, iPhone, iPad, Mac

I can't figure out why Apple lists iPad and Mac models in its system requirements footnote for this feature, which lets you **press the stem of your AirPods to mute or unmute** (on the AirPods Max, press the Digital Crown). As far as I can tell, the listed models equate to "everything." Even more confusing is that the iOS 17 and iPadOS 17 pages list different supported AirPods than the macOS Sonoma page.

- **iPhone:** Apple says, "Available in compatible applications with AirPods (3rd generation), AirPods Pro (1st and 2nd generation), or AirPods Max with the latest firmware."
- **iPad:** Apple says, "Available on iPad Pro 12.9-inch (2nd generation and later), iPad Pro 10.5-inch, iPad Pro 11-inch (1st generation and later), iPad Air (3rd generation and later), iPad (6th generation and later), iPad mini (5th generation and later) and AirPods (3rd generation), AirPods Pro (1st and 2nd generation), or AirPods Max with the latest firmware."
- **Mac:** Apple says, "Available on MacBook Air (2018 and later), MacBook Pro (2018 and later), iMac (2019 and later), iMac Pro (2017), Mac mini (2018 and later), Mac Studio (2022), Mac Pro (2019 and later) with the latest software, and AirPods Pro (2nd generation) with the latest firmware."

React with Your Hands: iPhone, iPad, Mac

With the new operating systems, you can spice up your video calls with **3D augmented reality reaction effects** like hearts, confetti, and fireworks, triggering them with a hand gesture. For the iPhone and iPad, Apple says it's available "when using the front camera." I could see that due to needing the front-facing sensor and camera array, but on the Mac, it works with the built-in camera or Continuity Camera, presumably supporting the rear camera. The feature requires:

- iPhone 12 or later
- iPad Pro 12.9-inch (5th generation and later), iPad Pro 11-inch (3rd generation and later), iPad (10th generation), iPad Air (4th generation and later), or iPad mini (6th generation)
- Any Mac with Apple silicon, any or any Mac when using Continuity Camera with an iPhone 12 or later

Screen Distance: iPad

To help reduce the incidence of myopia, the Screen Distance feature that **warns users to move the iPad further away** requires the TrueDepth camera on an iPad Pro 12.9-inch (3rd generation and later) or iPad Pro 11-inch (3rd generation and later). How many children do their reading on a recent iPad Pro?

Screen Sharing Enhanced Performance: Mac

Apple says it has significantly **improved Screen Sharing performance**, but that improvement relies on the advanced media engine in Macs with Apple silicon. You'll also need a high-bandwidth connection.

"Siri" Instead of "Hey Siri": iPhone, iPad, Mac

Apple's **simplification of the Siri invocation phrase** works on all iPhones with iOS 17 and iPads with iPadOS 17. However, on the Mac, Apple says it works only in English on Macs with Apple silicon or when using the AirPods (2nd generation).

Siri: Back-to-back Requests: iPhone, iPad

On an iPhone or iPad, you can **issue multiple requests to Siri** without having to reactivate it. The feature is available only in English and works on all iPhones running iOS 17, but on the iPad, it requires an iPad Pro 12.9-inch (3rd generation and later), iPad Pro 11-inch (1st generation and later), iPad Air (3rd generation and later), iPad mini (5th generation and later), or iPad (8th generation and later).

Time in Daylight: Apple Watch

The new option to have an Apple Watch track **how much time is spent outside** requires an Apple Watch SE (2nd generation), Apple Watch Series 6 or later, or Apple Watch Ultra.

Apple Expands Self Service Repair Program; Have You Used It?

by ADAM ENGST

Apple announced it has **expanded its Self Service Repair program** to include the iPhone 14 lineup and the M2 models of the 13-inch MacBook Air and 13-inch MacBook Pro. **Self Service Repair** is also now available for M1 Mac desktops—the 24-inch iMac, the Mac mini, and the Mac Studio—along with the True Depth camera and top speaker in the iPhone 12 and iPhone 13 lineups.

In addition, Apple says it has simplified the System Configuration process necessary to authenticate genuine Apple parts, update firmware, and calibrate parts. Previously, users had to contact the Self Service Repair support team to run the final step of the repair; that's no longer necessary.

I continue to find Apple's messaging around Self Service Repair intriguing. Just read this bit from the announcement where Apple simultaneously pats itself on the back for its support of the Right to Repair movement and warns users against using Self Service Repair.

Self Service Repair is part of Apple's efforts to expand access to repairs. Widespread repair access plays an important role in extending products' longevity, which is good for users and good for the planet. For the vast majority of users who do not have experience repairing electronic devices, visiting a professional authorized repair provider with certified technicians who use genuine Apple parts is the safest and most reliable way to get a repair.

But perhaps that's an accurate representation of the modern world, where a lot of people think they want to be able to repair their own devices and philosophically support the Right to Repair movement, but they don't actually trust themselves to complete a repair successfully.

Have you taken advantage of Apple's Self Service Repair program? How did it work out?

## Another Dozen Compelling Features Coming to Apple's Operating Systems in 2023

by JULIO OJEDA-ZAPATA

When Apple reveals new versions of its various operating systems, it unleashes a torrent of feature announcements that have observers scrambling to keep up. It is therefore helpful to cherry-pick a handful or two that will have a significant impact. After watching Apple's **2023 WWDC keynote**, Adam Engst adopted this approach in "**12 Compelling Features Coming to Apple's Operating Systems in 2023**" (5 June 2023).

I'm following up with my own list. I look at a half-dozen iOS 17, iPadOS 17, macOS 14, watchOS 10, and tvOS 17 features in a bit of detail and cite six additional ones in brief.

Safari Profiles

Profiles are a critical feature in **Google Chrome**, my current default Web browser, and in boutique browsers such as Arc (see "**Arc Will Change the Way You Work on the Web**," 1 May 2023). They allow me to partition my personal, day job, and freelance writer personas when using the Web, and shift among them as needed. Safari's lack of profile support is a big reason I have never fully embraced Apple's browser. Profiles are now coming to Safari in iOS 17, iPadOS 17, and Sonoma. They permit users to browse in a more organized way and to separate history, extensions, tab groups, cookies, and favorites. I'll need to see how Apple implements profiles before contemplating a switch, but I'm more excited about Safari than I have been in years. (Web apps are another reason for that.)
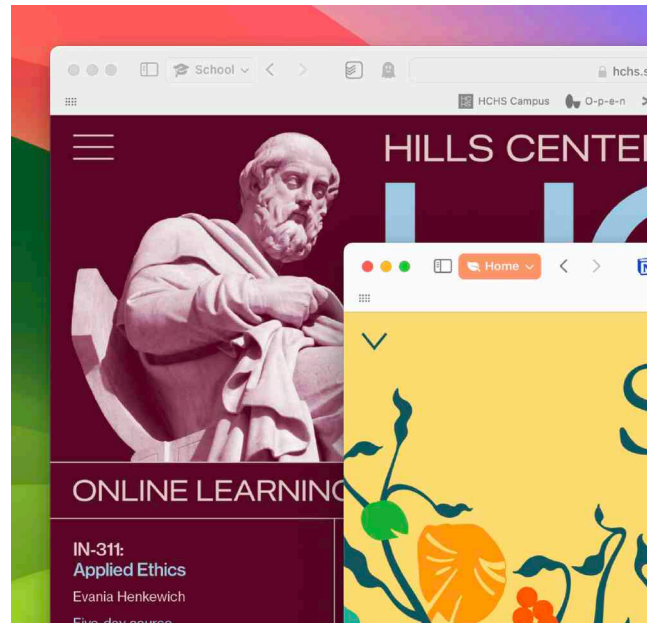
Find the Siri Remote

My wife, the main TV watcher in our household, continually loses track of our **Siri Remote**. That's partly because Apple never built Find My into the remote and partly because we decided not to use a third-party sleeve with an AirTag pocket (see "**Two Siri Remote Sleeves That Incorporate AirTag Pockets**," 22 July 2021). Something similar to Find My is now on the way. You'll be able to open the iPhone Control Center's virtual remote (which my wife refuses to use in place of the physical clicker) to start a hunt for the Siri Remote. It even provides an AirTag-like proximity indicator (though, reportedly, no swiveling arrow) so you know to keep looking under the couch cushions.

AirPods Adaptive Audio

Two big reasons to splurge on the second-generation **AirPods Pro** over the more affordable third-generation **Air-**

Pods are Active Noise Cancellation (to filter out ambient noise) and Transparency Mode (to let ambient sounds in when being aware of your surroundings is critical). Until now, that has been an either-or proposition. Now, with a feature called Adaptive Audio, the AirPods Pro will dynamically blend or shift modes as you move among environments and interactions. Annoying background noise is filtered out when you're on a walk, for instance, but you'll hear a bicycle bell clear as, well, a bell. Similarly, a "conversation awareness" feature engages when you start speaking so that your music volume automatically lowers, background noise is reduced, and the two-year-old Conversation Boost feature kicks in (see "**Ten Cool New Features Introduced at WWDC 2021**," 7 June 2021). This is supposed to happen seamlessly—Adaptive Audio is an additional option in Settings alongside Noise Cancellation and Transparency—so futzing should be minimal.

Group Password Sharing

I share passwords with my wife by giving her unfettered access to my **BitWarden** password manager with its hundreds of authentication entries. This is a great way to ensure she is never without an important password in an emergency, but some might prefer to engage in password sharing more selectively (as password managers typically allow). Apple already permits the **quick sharing of a password or a passkey**. With Safari in iOS 17, iPadOS 17, and Sonoma, it is building on this idea with the continual sharing of passwords among members of a trusted group. Settings stay current for everyone, and group members can be removed at any time.

iPhone StandBy

I have long disliked the near-uselessness of most iPhone screens when they are idle— while charging on a MagSafe stand, say. Android phones have **Ambient Mode**, which turns them into little smart displays that show bits of helpful information when the devices aren't in active use. In iOS 17, Apple is attempting something similar with StandBy, which transforms an iPhone into a smart display of a sort when charging in landscape mode. Customizable options include weather checks, photo browsing, setting of timers, use of Home controls, and the viewing of Live Activities such as food-delivery statuses and in-progress game scores. To use this feature effectively, you'll want a stand that holds the iPhone in landscape mode; Twelve South's Forté is one example (see "**Seven Third-Party Accessories Show MagSafe's Potential**," 4 June 2021).

Cycling Sensor Support

Nerdier cyclists often equip their bikes with Bluetooth sensors for measuring cadence, heart rate, power, and speed. I do this at home when using a stationary bicycle with the Zwift cycling simulator ("**Zwift Transforms Stationary Bicycling into a Shared Virtual Experience**," 1 July 2020). However, I have long wanted to cut the expensive Zwift out of the equation. Now, with watchOS 10, Apple is adding direct sensor support for those riding indoors and outdoors, as well as people using GymKit gear. Cyclists can add cadence and power to their Apple Watch metrics via corresponding sensors. They can also tap into a new "cycling power workout view" that blends power, heart rate, and motion data to provide useful information. I am left with a question: Will **smart trainers** (stationary bike stands with built-in sensors for Zwifting) be supported?

Six More Features, in Brief

- **AirPods press-to-mute:** Need to mute a phone call? Squeeze the stalk on third-generation AirPods and first- and second-generation AirPods Pro. On the AirPods Max, pressing the Digital Crown has the same effect.

- **Record a video message:** When someone you're calling isn't available on FaceTime, you'll finally have the option to record a video message, complete with features like Portrait Mode and Studio Light. You can leave an audio message, too. Just talk to the machine.
- **Health app on iPad:** The Health app's prolonged absence from the iPad and Mac made no sense. Apple is partially remedying this omission by bringing the Health app to iPadOS 17. Log symptoms, create med reminders, track menstrual cycles, it's all there. If it's so easy to port apps between Apple's platforms, what's keeping it off the Mac?
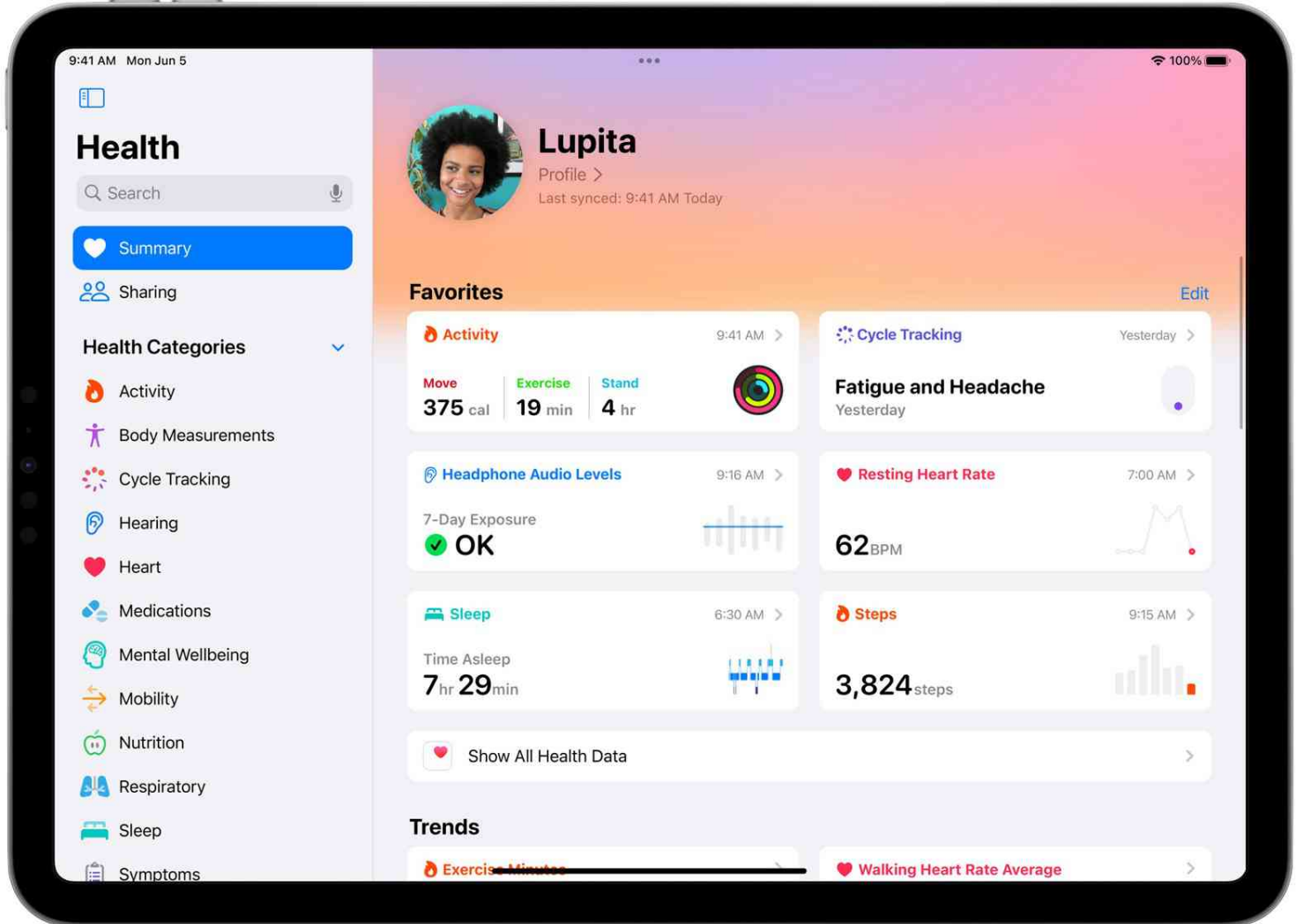
- **Crosswords in Apple News+:** Details on this feature are sparse, but I'm excited because I all but live in Apple's News app and devour its news headlines, magazine issues, and audio content. Puzzles will be a swell addition, but they're only for Apple News+ subscribers.
- **Grocery list sorting:** Navigating a vast supermarket is one of my toughest first-world problems. The Reminders app in iOS 17, iPad OS 17, and Sonoma will make it easier by sorting grocery items into categories for optimal grocery store triangulation. You can change how items are grouped, and your shopping list remembers your preferences.

More Features Yet

For a list of everything coming in 2023's operating systems—and Apple's descriptions of the features below—see:

- **iOS 17**
- **iPadOS 17**
- **macOS 14 Sonoma**
- **watchOS 10**
- **tvOS 17**

All these operating systems are now available in beta form for developers, will appear in public beta form for everyone soon enough, and should ship in the usual September/October time frame.

Computer & iOS Security

Apple Updates All Active Operating Systems to Block Exploited Security Vulnerabilities

by ADAM ENGST

Apple has updated all its active operating systems to address (in varying combinations) three security vulnerabilities, all of which are actively being exploited in the wild. The most concerning of the three vulnerabilities affects the kernel and thus cuts across all Apple operating systems, new and old. macOS, iOS, and iPadOS also receive fixes for a WebKit vulnerability, and iOS 15.7.7 and iPadOS 15.7.7 plug yet another WebKit vulnerability that has presumably been addressed in newer versions but afflicts versions prior to 15.7.

The affected operating systems include:

- **iOS 16.5.1 and iPadOS 16.5.1**
- **iOS 15.7.7 and iPadOS 15.7.7**
- **macOS Ventura 13.4.1**
- **macOS Monterey 12.6.7**
- **macOS Big Sur 11.7.8**
- **watchOS 9.5.2**
- **watchOS 8.8.1**

Neither tvOS nor HomePod Software are included at the moment. It's possible the exploits can't affect them, or perhaps Apple will release updates for them shortly as well.

iOS 16.5.1 and **iPadOS 16.5.1** also fix a bug that prevented charging with the Lightning to USB 3 Camera Adapter. It must have been waiting in the wings such that it could hop a ride with this set of security updates.

Although it's difficult to determine the severity of any given security vulnerability, Apple's language about active exploits against new and old versions, coupled with the release of so many updates at once—even watchOS 8.8.1 for the Apple Watch Series 3—suggests these vulnerabilities are especially concerning. Update as soon as you reasonably can.

## How to Identify and Eliminate Abusive Web Notifications

by ADAM ENGST

Has a notification appeared on your Mac that claims your McAfee anti-virus software subscription has ended, "Your iCloud is being hacked," or someone is trying to access your bank account? These attempts to phish you by notification are malware, plain and simple—the form known as adware. The alerts try to trick users into visiting a fake website and entering login credentials or credit card information to facilitate identity theft, just like a phishing attempt via email. Attempting to eliminate the notifications by running anti-malware apps like Malwarebytes, DetectX Swift, or VirusBarrier won't work. What's going on?

Randy Singer, who runs the MacAttorney User Group and publishes a variety of pages with **helpful Mac advice**, passed on this warning about abusive notifications recently. Such abuses of Web push notifications have existed for years, but I've never seen one on my Mac. Between Randy's warning and reader David Roessler writing in a few days later to suggest a similar article, I decided it was time to address the topic.

Unlike regular malware, notification adware doesn't require an infection, so anti-malware software has nothing to find or remove. Instead, notification adware exploits the capability of Web browsers to let websites display system-level notifications just like native apps. No one would intentionally sign up for adware notifications, of course, but websites can—and increasingly do—ask users if they'd like to receive notifications. There's nothing inherently wrong with a website offering notifications. As one of many examples, the Discourse software we use for TidBITS Talk offers notifications for those who want to be notified of new messages or replies. But like many well-intentioned technologies, Web notifications can be turned to the dark side.

Part of the problem is that agreeing to receive notifications requires nothing more than pressing Return to accept the Allow option when Safari's permission dialog appears, and websites can present their own dialogs before triggering Safari's dialog to lull users into complacency. Once notifications
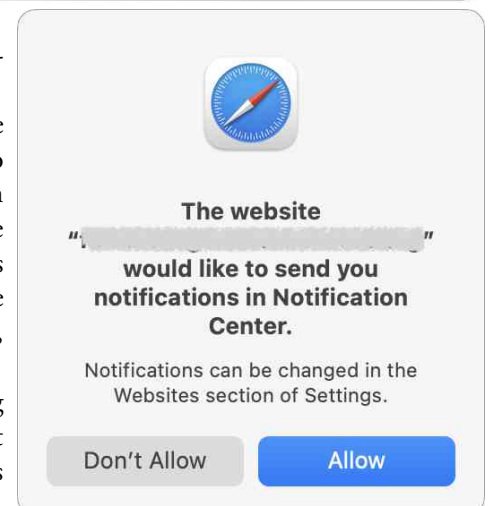
have been allowed, they have the imprimatur of coming from macOS, which makes them seem all the more believable.

Of course, if you're paying attention and are sufficiently technically aware—as most TidBITS readers are—simply click Don't Allow when a website asks for notification permission. That's what I do in nearly all instances. I've allowed sites to present notifications in only a handful of cases.

If you're categorically opposed to notifications or are assisting someone who may not understand what they're agreeing to, Safari provides a simple way to ensure you're never asked to allow notifications. Go to Safari > Settings > Websites > Notifications, and deselect "Allow websites to ask for permission to send notifications" at the bottom.

Other Web browsers can also be subverted to show abusive notifications, and they too let you avoid being prompted at all. The interfaces vary slightly, but most will look like Google Chrome, as shown below.

Arc: Choose Arc > Settings > General > Notifications and select "Don't allow sites to send notifications."

Brave: Navigate to Brave > Settings > Privacy and Security > Site and Shield Settings > Notifications and select "Don't allow sites to send notifications."

Firefox: Go to Firefox > Settings > Privacy & Security > Notifications and select "Block new requests asking to allow notifications."

Google Chrome: Navigate to Chrome > Settings > Privacy and Security > Site Settings > Notifications and select "Don't allow sites to send notifications."

Microsoft Edge: Choose Microsoft Edge > Settings > Cookies and Site Permissions > Notifications and turn off "Ask before sending."
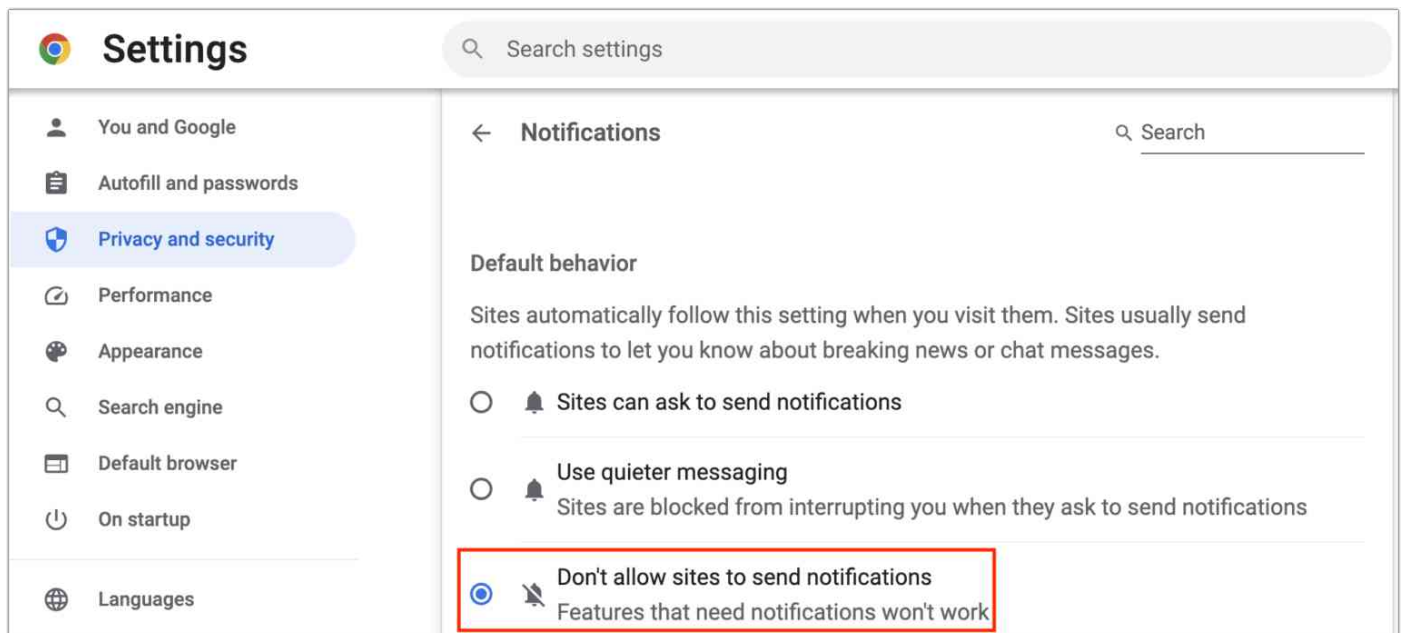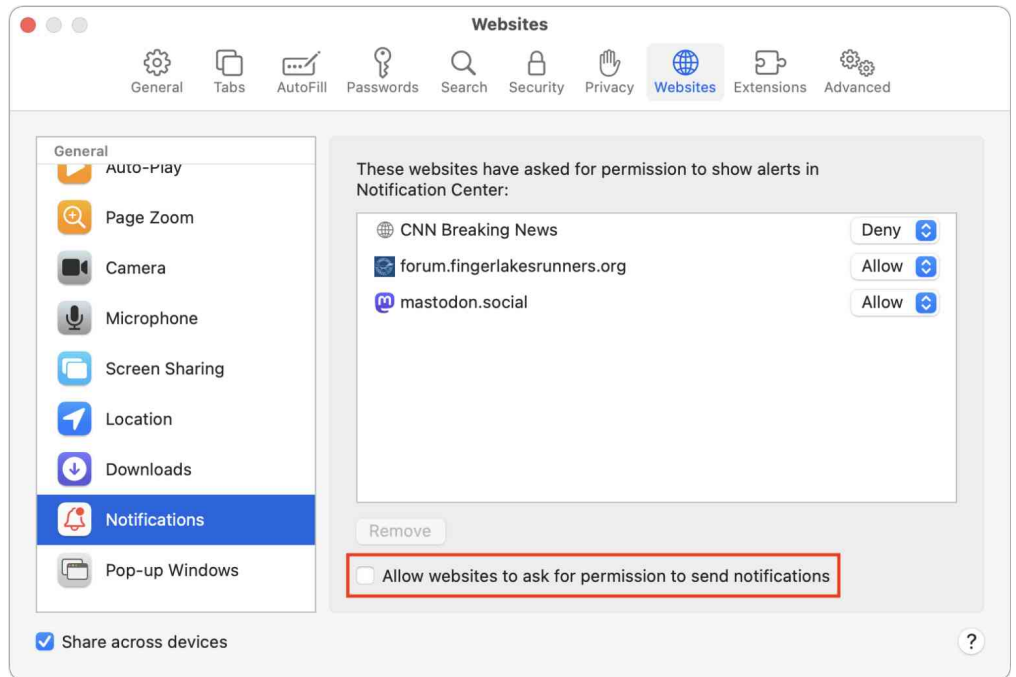
In theory, Chrome should be less susceptible to phishing notifications than Safari, potentially along with other Chrome-derived browsers (everything in the list except Firefox). In 2020, Google introduced the middle option above for "**quieter messaging**," which replaces the permission dialog with a bell icon next to the site name in the address bar—click it to allow notifications. In subsequent updates in 2020, Google started **identifying websites that display abusive notifications** and calling them out in the permission request. I say "in theory" because Apple consultant Adam Rice told me he mostly sees spammy notifications in Chrome.

Disabling "Allow websites to ask for permission to send notifications" prevents new sites from spamming you with notifications. But what about sites that already have permission? It's easy to block their notifications in Safari too. If you have any sites with Allow in the pop-up menu to the right of their name in the Notifications screen, just choose Deny from that menu. Firefox's interface is similar. Don't remove the site because—depending on other settings—that may allow it to ask again for permission.
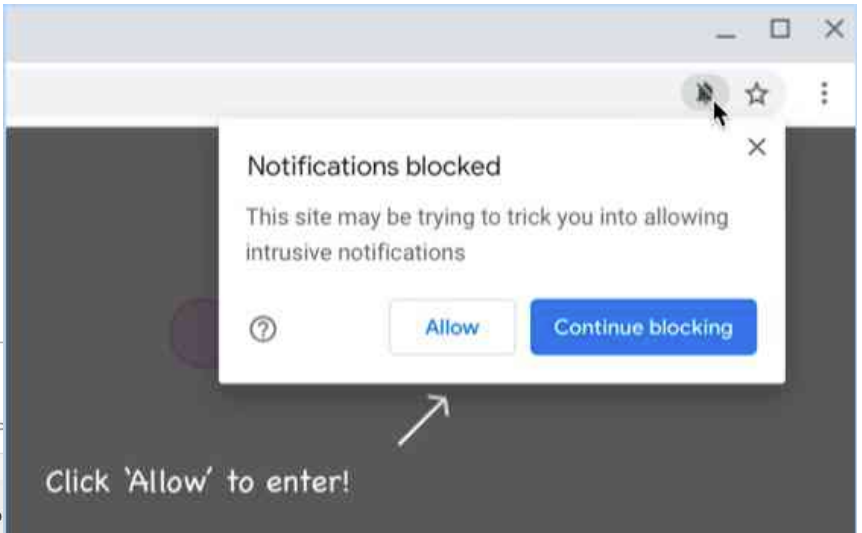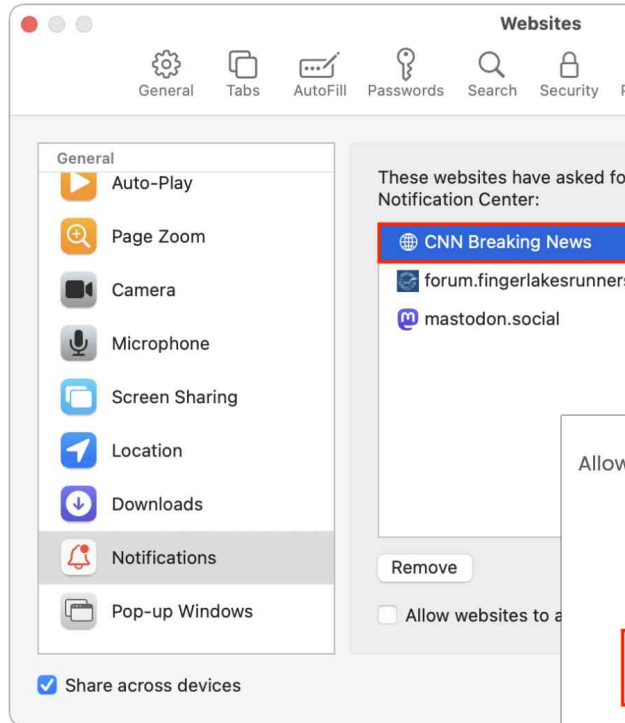
Chrome-based browsers separate the blocked and allowed sites. To block a website whose notifications you no longer want to receive, click the button to the right and choose Block.
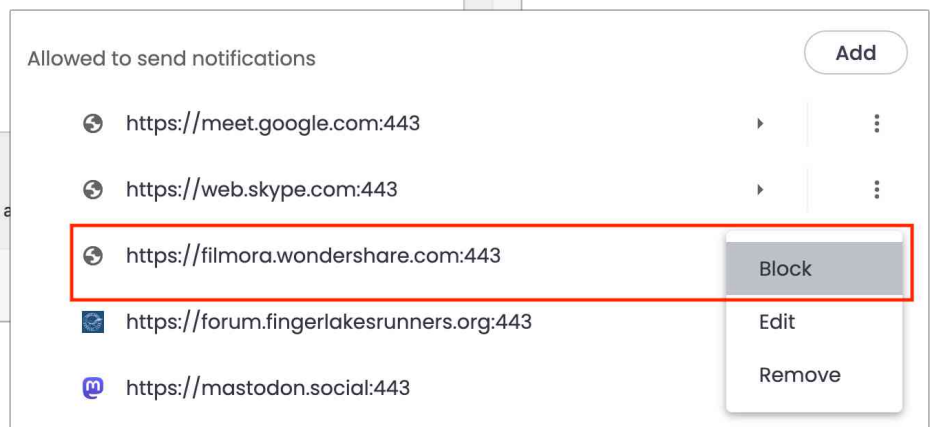
Finally, if these notifications plague you or someone you know, consider the websites being visited. Websites that trick users into allowing notifications so they can display phishing notifications are malicious, or at least complicit in allowing their visitors to be targeted by including third-party elements that engage in this phishing. Ideally, you'd avoid them.

It may not be that easy. In 2020, security journalist **Brian Krebs wrote about a service called PushWelcome** that advertised the ability for website publishers to monetize their traffic. It asked publishers to include a small script that generated the often-deceptive notification requests on legitimate sites. PushWelcome appears defunct now, but other such ad networks may still exist.

I realized it's easier to say, "Don't visit sketchy websites," than explain what makes a site problematic. Nevertheless, if you—or the person you're helping—have any doubt about the legitimacy of a website or the website owner's security capabilities (for protecting their site against subversion by hackers or being deceived by an ad network like PushWelcome), you might not want to trust it to display notifications or collect any personal information.

If you run across a site that pushes spammy notifications at you, **report it to Google Safe Browsing**, which warns users about problematic sites. It currently issues over **3 million warnings per week**, which sounds like a lot until you see it offered over 50 million warnings per week in mid-2016.

To stay safe on the Web, browse with care and click with intention.

The Password Game Is Fun, Frustrating, and Educational

by ADAM ENGST

If you enjoy puzzles, check out **The Password Game** by Neal Agarwal. It simply asks you to choose a password. How hard could that be? As good Internet users, we all know about making passwords that meet the standard requirements, such as a minimum length, having both uppercase and lowercase letters, adding at least one digit and a special character, and more.

Such passwords are for pikers. The Password Game has 35 rules that you must satisfy, one after another, as you attempt to create a password. The rules start simple, ensuring that your password is at least five characters and includes a number, an uppercase letter, and a special character.

But then the puzzles start, forcing you to add more to your password and often change what you've done previously. The digits in your password must add up to 25. Easy enough. A month of the year? No problem. A Roman numeral? Everyone knows one of those. But after identifying a corporate logo, suddenly you're told that the Roman numerals in your password must multiply to 35. Then you're required to enter a CAPTCHA, which is easy enough, but any numbers in it break the rule about the digits adding up to 25. No worries, just change your password's digits until you've satisfied that rule again.

Wait, it wants today's Wordle answer? (It's not kidding; the answer changes every day.) That's the beginning of the questions that require research and may force you to learn new skills. Can you figure out what the current phase of the moon is and find the matching emoji? (Hint: choose Edit > Emoji & Symbols and perform a search.) Identifying a country from a Google Street View image is significantly more challenging—you may be able to zoom in to get a clue from a sign, but if not, it's an excuse to learn how to do a reverse image search in Google Images from a screenshot.

Eventually, you'll hit Rule 16, which wants the "best" move on a randomly generated chess board in algebraic chess notation. It's easy enough to figure out the necessary notation with the provided link, but what you may miss is that if you're putting the opposing king in check, you must add a + character. I'm not sure I agree with the required move being "best" in all cases, but my chess knowledge is limited to knowing how the pieces move.

Once you get past the chess puzzle, The Password Game adds a videogame element. You have to add an egg emoji that will hatch into a chicken named Paul, and once he hatches (after some other drama), you have to feed him emoji caterpillars, which disappear at a rate of one every 20 seconds. Stressed out by having to keep pasting more caterpillars while learning how to search for a You-Tube video of a specific duration, I pasted too many caterpillars in and was abruptly informed that I had overfed Paul, ending the game at Rule 24. Curses, foiled again! I would feel worse, but even **the game's creator hasn't completed it successfully**.

Although a few of the puzzles change, like the Wordle answer, identifying a country from a picture, and the chess board, The Password Game isn't something you'll play every day. But I can certainly see playing until you beat it.

And now, if you'll excuse me, I have to see what comes after the YouTube video while keeping Paul the chicken properly fed. Once I solve it, I plan to check out the rest of **Neal Agarwal's mini-sites**. Some are games; others are more social commentary, but all those I've looked at are amusing.

About Us

The Silicon Mountain Macintosh User Group, Inc. (a nonprofit educational corporation) was formed in Colorado Springs, Colorado in 1985, and is one of the oldest Macintosh User Groups in the United States. SMMUG, Inc. is dedicated to helping members enjoy and learn about their Macintosh computer, iPhone and iPad devices.

Club membership is open to everyone and you are cordially invited to visit our free monthly General Meeting on the second Monday of each month, at 7:00 PM. For those new to the Macintosh, we have a Question & Answer session at 6:00 PM, where our collective expertise can help answer your questions.

All members receive a monthly newsletter, published on **our web site,** see great reviews of software and hardware, or can participate in the monthly door prize drawing. Each member gets one vote during annual Officer Elections. No corporate memberships are granted.

Our officers are volunteers and receive no pay. All funds raised are used for the cost of operating the club and its meetings.

Membership Application Form

Membership entitles you to access to our online forums, participation in prize drawings, and access to the bargains in the members area of the SMMUG website at www. smmug.org. SMMUG renewal membership dues ($30) apply to the calendar year and are paid each December for the following year. Use the following table for NEW MEMBERSHIP ONLY:

JAN 1 to MAR 31 - $30.00   APR 1 to JUN 30 - $20.00
JUL 1 to SEPT 30 - $15.00   OCT 1 to DEC 31 - $10.00

Please Print Clearly!   Today's Date _____

Name _____
Street Address _____
City/State/ZIP _____
Home Telephone _____ Business Telephone _____
E-mail Address _____
Have you previously been a member of SMMUG? _____
How did you learn about SMMUG? _____

Make your check payable to: **SMMUG**
Then mail or give this form and your check to:

SMMUG, Inc.
2100 Wood Avenue
Colorado Springs, CO 80907-6718

☐ Please make an online account for me.
User Name _____

☐ Don't make an online account for me. I do not want one or I already have one.