



The Rochester Computer Society, Inc. a computer/tech club open to everyone



Vol. 43, No.11 web: www.rcsi.org Rochester, NY November, 2024

Our Club

RCSI is a nonprofit 501(c)(3) group open for membership to anyone interested in computers and new technology.

Established in 1981, our aim is to provide an exchange of information between users of digital devices. We are not in any way affiliated with any computer manufacturer or software company, and **we do not sell your data or email address.**

Program Meetings

No admission fee for non-members. Everyone is welcome! Second Tuesday of every month, **except July and August**, from 6:30pm-8:30pm.

Help's Half Hour (Q & A) 6:30pm – 7:00pm. *Members and Guests are welcome to attend and bring their computer related questions with them to get answered. **Yes, you may bring the problem computer with you.***

7:00 – 7:10, Club Business

7:10 – 8:30+, Main Presentation
Come and join in the fun and enjoy a snack! **You are welcome to bring a guest.**

Become a Member

The club would like to have you as a member, and your subscription will help to keep us going. Go to our website, www.rcsi.org, and download a printed form for use by the Post Office mail, **or** enter your info online and pay with a credit card or PayPal, **or** attend a meeting.

**Nov 12, 'Gifts & Gadgets', by Arpad Kovacs
'Wearable Technology', by Tony Dellelo**

**Dec 10, 'Potluck Video Night', members
bring a 5 to 10 minute video to show**

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The Future of Search: Embracing AI-Powered Search Solutions

By Ram Jalan, 09/24

In today's fast-paced digital landscape, where information overload is the norm, AI-powered search has emerged as a game-changer. Traditional search engines, while effective, often struggle to deliver precise and personalized results. This is where AI is revolutionizing how we search and interact with digital content.

What is AI-powered search?

AI-powered search leverages artificial intelligence, machine learning, and natural language processing to understand the intent behind search queries. Unlike conventional search engines that rely on



“Your Computer User Group of the Air”, Saturdays from 12:00 pm to 2:00 pm, with Nick Francesco, Dave Enright, and Steve Rae. Broadcasting on JAZZ 90.1 FM (WGMC) from Rochester, NY. Call 966-JAZZ (585-966-5299) or 800-790-0415,

www.jazz901.org

Sound Bytes is the longest running computer call-in show in the known universe.

We have stopped printing the Monitor newsletter.

Digital copies can be emailed or obtained from www.rcsi.org or my Pcloud storage at <https://tinyurl.com/tonydel-rcsi> (**this link works in PDF version only**). Also includes presentation slides, **past newsletters dating back to 1996** and articles too large for this newsletter.

Some Past Presentations:

- Autonomous Cars and Robots
- Open Source and Free Software
- Protecting Your Identity
- Tablets, the Programs and Uses
- Personal Finance Software
- Amazing Browser Tips
- Linux is Like Cars
- Drones and Their Many Uses
- Gifts and Gadgets for the Holidays
- Cut the Cord, Streaming Services
- 3D Printing, ENABLE project
- Features, Mac OS X & Windows
- The New Space Race, 2021
- Tech of South America
- Internet Security and Privacy
- AI and Digital Assistants
- Emerging Technologies
- My Favorite Android Apps

keyword matching, AI-powered systems analyze the context, user behaviour, and even voice commands to deliver highly relevant results. This technology effectively handles complex queries and provides a more intuitive search experience.

The Impact of AI on Search Efficiency

The integration of AI into search engines significantly enhances their efficiency. AI algorithms can sift through vast amounts of data, learning from user interactions to improve accuracy over time. For businesses, this means delivering content that aligns more closely with user needs, leading to higher engagement and conversion rates. AI-powered search is not just about finding information; it's about finding the right information at the right time.

Transforming User Experience with AI-Powered Search

User experience is at the heart of AI-powered search. By understanding the nuances of human language and behavior, AI can predict what users are looking for, even before they finish typing. Features like voice search and personalized recommendations are becoming more common, making it easier for users to find what they need quickly and efficiently. This level of personalization is critical in today's competitive digital environment, where user satisfaction directly impacts brand loyalty.

AI-Powered Search in Business and Marketing

For businesses, adopting AI-powered search is a strategic move. Marketers can harness this technology to gain deeper insights into customer behavior, optimize content for search engines, and enhance overall digital marketing strategies. AI-powered search tools can also help identify trends and patterns that might be missed by human analysts, providing a competitive edge in a crowded market.

The Future of AI-Powered Search

As AI continues to evolve, so will its applications in search technology. We can expect even more sophisticated AI-powered search engines that understand context deeply, provide real-time answers, and integrate seamlessly with AI-driven tools. The future of search is not just about accessing information; it's about creating a more connected and intuitive digital ecosystem.

Conclusion

AI-powered search is not just a trend; it's a transformative force in the digital world. By embracing this technology, businesses and users can benefit from more accurate, efficient, and personalized search experiences. As we progress, AI-powered search will continue to shape how we interact with digital content, making it an indispensable tool for the future.

Note: About the author. Hey there! I'm Ram. A wanderer in the digital domain, a mentor at heart, and a believer in the magic of technology. For years, I've been on a mission to enlighten, inspire,

APCUG, An International Association of Technology and Computer User Groups
<https://apcug2.org/>

Saturday Safaris

Exploring Technology in Depth
Saturdays:
12 pm – 2 pm EST

<https://apcug2.org/saturday-safaris/>

Tech for Seniors

<https://www.techforsenior.com>

hosted by Ron Brown and Hewie Poplock
Every Monday from 9-10 AM PT, (12-1 PM ET)
Broadcast with Zoom
The meeting ID is **526-610-331** (there is no password) and you'll be placed in a waiting room and then admitted.

#

APCUG Website Help

Windows & Android Tips:

By Judy Taylour

<https://apcug2.org/jerestips/>

Apple Tech Tips:

<https://apcug2.org/50-best-mac-tips-tricks-timesavers/>

Penguin Platform (Linux):

<https://apcug2.org/penguin-platform/>

Chromebook Tips And Tricks:

<https://apcug2.org/chromebook-tips-and-tricks/>

and guide folks through the ever-evolving digital landscape. My blog is my canvas, painted daily with thoughts, lessons, and stories to spark change. Read my articles on <https://www.marketing-shots.com> and read the complete article on <https://marketing-shots.com/digital-transformation/ai-powered-search/>

Found on Article source: <https://articlebiz.com>

What Are Tracking Cookies, and Should They Concern Me?

by Leo Notenboom, <https://askleo.com/>

Making Technology Work For Everyone

They don't worry me, but others feel differently.



(Image: DALL-E 3)

Cookies are placed on your machine by websites -- often more websites than you realize. We'll review cookies and how third parties can use them.

In two other articles — [What Can a Website I Visit Tell About Me?](#) and [What Are Browser Cookies and How Are They Used?](#) — I discussed how websites gather information about the people who visit them.

What I didn't talk about in much detail is that through clever use of cookies — typically associated with advertising — some services gather and use more information about you.

We need to talk about tracking and third-party cookies.

Tracking cookies

Cookies are pieces of data stored on your computer by websites to remember information between visits. Third-party cookies, often used by advertising services, track your behavior across multiple websites.

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Planning Meeting

Held on 1st Tuesday of each month at 7 pm, * * ONLINE * *. We will be using Zoom. ANY CLUB MEMBER MAY ATTEND.

Monitor Newsletter

The Monitor is published monthly by members of RCSI. Articles by our members may be reprinted by other user groups or nonprofits, without special permission. A courtesy copy may be emailed to the author or Monitor editor. Limited copies (probably in black and white) will be printed and available at our meetings.

Club Mailing Address

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While this enables targeted advertising, individual users aren't personally tracked, and data is analyzed only in aggregate.

Cookies 101

First, a quick review: a [cookie](#) is just some data placed on your computer when you visit a website. That data is sent back to that website the next time you visit it.

That's all.

When you visit askleo.com, for example, the website might place a cookie on your machine that says "This person has seen the newsletter pop-up." A week later, when you visit askleo.com again, that cookie is automatically and transparently sent to the website so it knows you've already seen the newsletter pop-up and it won't annoy you with it again.

That's all cookies are: a way for websites to remember things between visits. What they remember is completely up to what the website chooses to place in the cookies it leaves on your machine. They can contain pretty much anything.

Next, we need to talk about how most advertising works on a website.

Advertising 101

Most advertising on the internet is performed by services connecting large numbers of advertisers with large numbers of websites signed up to display ads.

So when you visit <https://example.com>, you might see ads from <https://ads.somerandomservice.com>. (To be clear, all URLs here are fictitious examples.) Later, when you visit some other site — maybe <https://reallybigbookstore.com> — you might see ads there from that same advertising service: <https://ads.somerandomservice.com>. When your browser loads the page from <https://example.com>, the [HTML](#) on that page says, in effect, "Place an image here. Get that image from <https://ads.somerandomservice.com/>..." at which point your browser dutifully goes out to ads.somerandomservice.com and gets the image, which is an ad.

This is where cookies enter the picture.

Cookies + Advertising = Third-Party

When your browser fetches a [URL](#) — be it the page you asked for or an element within that page, like an ad — the website it contacts can place cookies on your machine.

So when you go to <https://example.com>, then of course example.com can place cookies. However, if that page also references another website (like <https://ads.somerandomservice.com/>) for an image on that page, then ads.somerandomservice.com can place cookies as well.

These are called *third-party cookies*.

Tidbits of probably useless information

A **finger nail** takes around six months to grow from base to tip and toenails can take up to a year. But a couple factors tend to speed that process up: Fingernails grow faster on your dominant hand as well as on your bigger fingers, and nails also grow faster during the daytime as well as during the summer months.

Frigate birds can sleep while flying. That's because they can snooze while using only one hemisphere of the brain at a time.

Mr. Monopoly is the mascot of the board game Monopoly, also known as Rich Uncle Pennybags, Milburn Pennybags, or the Monopoly Man.

The squirrels in your neighborhood are most likely brown, black, or grey. But in southern India, there are giant technicolor squirrels. Weighing around four pounds and measuring up to three feet from head to tail, the **Malabar giant squirrel** looks more like a rainbow of colors.

Spoonfeed, at nine letters long, is the longest word in English, with letters arranged in reverse alphabetical order. Trollied is an eight letter word with this property. Seven letter words with this property include sponged and wronged. This is according to Guinness World Records.

- You are the first party.
- The site you visit is the second party (example.com in our example).
- The site(s) referenced for additional content by the site you visit are third parties (ads.somerandomservice.com in our example).

So far, so good; you visit a site, it can place cookies, and the sites that provide additional content on that page can also place cookies.

Here's where it gets interesting.

Let's walk through a scenario step by step.

- You visit example.com.
- Example.com has ads that are loaded from ads.somerandomservice.com.
- The first time you visit example.com, ads.somerandomservice.com puts a cookie on your machine that says, "This is advertising visitor #12,345,678."
- Now you go visit reallybigbookstore.com.
- Reallybigbookstore.com happens to use the same ad service, ads.somerandomservice.com.
- Ads.somerandomservice.com already has a cookie on your machine. When the request is made to display an ad, that cookie is sent to ads.somerandomservice.com.
- Ads.somerandomservice.com sees the cookie it put down earlier that said, "This is advertising visitor #12,345,678."
- Ads.somerandomservice.com now knows that you — advertising visitor #12,345,678 — visited both example.com and reallybigbookstore.com.

That is a tracking cookie at work. Third parties use cookies to understand where you go on the net within the sites they service.

It gets bigger

So far, all I've talked about is advertising services. In reality, this simple technology can and does span more services.

For example, you may have heard of a company called Google. They have their fingers in many, many pies.

- Advertising – Adwords for advertisers, Adsense for websites who want to make money from ads
- Analytics – Google Analytics, a comprehensive analysis tool that allows websites to understand how people use their site
- Personal productivity – Gmail, Contacts, Calendar, and more
- [Cloud](#) services – Google Drive, photo sharing, YouTube, and more
- Personal publishing services – Blogger

The list goes on.

WINDOWS DEFENDER ANTIVIRUS: 5 SETTINGS TO CHANGE FIRST –

Windows Defender is a capable antivirus solution built into Windows itself. Unless you've installed a different antivirus program on your Windows 11 or Windows 10 PC, your PC is using it right now. The good news is that Microsoft's Defender antivirus is designed to "just work" without a lot of tweaking and it has sensible defaults. But there are still a variety of settings you may want to change in your PC's built-in antivirus program. [Windows Defender antivirus: 5 settings to change first | PCWorld](#)

THIS CLEVER TIP ALERTS YOU WHEN APPS ARE ADDED TO STARTUP IN WINDOWS 11 – The Startup page in Windows 11's Settings helps toggle which apps auto-start when you boot the system. But the more apps you have enabled in Startup, the longer it takes for Windows to be entirely usable after restarting. That's why checking the Startup page occasionally and disabling unwanted apps is good. Read more at [How to get alerts when new apps are added to Startup in Windows 11 | PCWorld](#)

The net result is that by interacting directly with a Google service or interacting with a site that uses a Google service, you are exposed to many opportunities for Google to leave tracking cookies on your machine.

It's not just Google; they're just a large, easy-to-understand, somewhat extreme example. The same is true for varying degrees of other advertising networks and behind-the-scenes online service providers.

Blocking third-party cookies

Most browsers block third-party cookies by default. It seems like this would invalidate much of what I've listed above. Sadly, that's often not the case.

When third-party cookie blocking on the rise, advertisers and other services have developed other approaches. Tracking still happens via cookies, so-called ever-cookies, local storage, on-page information, and more. It's more complex, for sure, but not that difficult.

That's why you'll sometimes see ads that "follow" you around the internet even if you have third-party cookies disabled.

Who cares?

My fervent belief is this:

Your actions as an individual are completely uninteresting. No one cares.

No one is tracking you personally. Besides, most of these services collect way too much data to drill down to any one person.

Instead, this type of tracking is examined in aggregate. For example, with this data, the advertiser can determine things like "40% of people who visit example.com also visit reallybigbookstore.com." None of them say or care that "Leo Notenboom visited both example.com and reallybigbookstore.com."

At best, they can say, "Anyone who visited example.com and looked at X should then be shown ads for X when they visit reallybigbookstore.com." Note that it's "anyone" — generic, anonymous people — and not "Leo Notenboom".

Advertisers and website owners eat that stuff up. They use it to make decisions that support their profitability.

But, again, I strongly believe that Leo Notenboom just isn't that interesting as an individual.

And don't take this personally, but neither are you.

Do this

Don't sweat cookies or other targeted advertising. I know it can feel creepy, but I strongly believe they're not looking at you as an individual but rather as anonymous people who behave in specific ways.

Med Gadgets

Staying on top of your activity does not have to break the bank.

Achieving your fitness goals doesn't have to be expensive or complicated. Keeping track of your progress will be crucial, but not everyone needs to drop hundreds of dollars on the [best smartwatches](#) out there. The average affordable tracker might offer just the right tools to help kickstart your health journey, like a heart rate monitor, sleep quality data and so on.

All of the best fitness trackers should have at least three features: a program to track workouts or movement of some sort, the option to monitor and collect sleep data and the ability to measure health metrics like heart rate and blood oxygen levels (though, the readings might not be super accurate).

The [Xiaomi Smart Band 8](#) stood out on many fronts — it not only has the easiest interface to navigate when recording workouts, it also has the most comfortable band to sleep in. Xiaomi's tracker also has a unique "[Pebble](#)" mode, which allows you to clip on the tracker to shoelaces using a special case to gather running and cycling data. This device has pretty much everything you would expect on a fitness tracker, and it comes at a price that's hard to beat. [\$47 at Amazon]

<https://www.engadget.com/best-cheap-fitness-trackers-140054780.html>

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END OF ARTICLE

Cyber Security

By David Kretchmar, Hardware Technician
Sun City Summerlin Computer Club

Recently, SCSCC Vice President Tom Burt provided members with a link to an interesting article from *Malwarebytes* about cyber security: <https://www.malwarebytes.com/blog/news/2023/10/the-3-crucial-security-steps-people-should-do-but-dont>

Malwarebytes (2-week free or trial version) is an excellent product that other SCSCC technicians and I frequently use to search for malware and other potential PUPs (potentially unwanted programs) on computers. *Malwarebytes professional* is their paid-for real-time protection sold for \$30 - \$45 per computer per year.

The essential point of the article was that many internet users employ "dismal cybersecurity practices" and are too lax in implementing and using security measures designed to keep them safe and secure. Some experts estimate that one-third of individuals experienced a security breach within the past year. This sounds reasonable based on my personal experience. Still, I also find it comforting that older adults (Baby Boomers) are estimated to be four times less likely to experience a security issue than younger users. I'm unsure if we are more careful than younger users or if we do less online.

While anything that makes people aware of the dangers that stalk all of us online is valuable, I disagree with two of the three primary points raised in the article. *Malwarebytes* provided the article, and since they sell subscriptions to their products to stay in business, it is arguably in their interest to frighten people, who then will be more likely to become customers.

In the following paragraphs, I will discuss the essential three points made in the article that I find misleading, outright untrue, and primarily true (multi-factor authorization).

"Just 35 percent of people use antivirus software."

I call BS on this. It is rare for me to come across a computer that has no antivirus software running. Microsoft Windows Defender runs by default on Windows computers and does not have to be turned on by the user. This is by far the antivirus software utilized by most individuals, and it has the advantage of having no cost beyond what a user initially pays for a Windows PC.

In addition to being "free," the Microsoft Windows Defender program code is updated at least monthly. The monthly security

Virtual Tours

For future students:

Virtual Field Trips to Explore Careers of the Future, sponsored by **Amazon**.

<https://www.amazonfutureengineer.com/careertours>

Touring a college campus is an exciting rite of passage for many high school students as they explore their future stomping grounds. For a variety of reasons students and families might not be able to visit in person—but that doesn't mean they have to miss out! Below, 15 of the many virtual college campus tours available online right now.

<https://www.weareteachers.com/virtual-college-campus-tours/>

Whether you're eager to explore **Florida Tech's campus** before scheduling your in-person visit or simply want to look around for fun, this 360-degree virtual tour provides a convenient way to get to know campus. Walk through the botanical garden, envision yourself in the classrooms and laboratories, or enjoy a scenic virtual stroll through campus. Where you explore is up to you in this self-guided virtual tour!

<https://www.fit.edu/admission/visiting/virtual-tour/>

The best way to learn about **Caltech** is to experience it firsthand. Tours can offer an insider's perspective on what makes Caltech unique: from its innovative curriculum and student traditions to its world-class faculty and legacy of pioneering research.

<https://www.caltech.edu/about/visit/tours>

UofR campus tour.

<https://www.youtube.com/watch?v=-LDDgzXp7TE>

update release is scheduled for the second Tuesday of each month. The Microsoft Windows Defender virus intelligence database is updated almost daily in case of newly discovered threats, also known as a 0-day or zero-day vulnerabilities. The term zero-day refers to the fact that the vendor has just learned of the flaw – which means they have zero days to address it.

It might be that only 35% of users subscribe to an antivirus software tool other than Microsoft Windows Defender. Certainly, *Malwarebytes* would like you to buy their product, but the article states an untruth when it says that only 35% of computers are protected.

I believe Microsoft Windows Defender provides excellent protection for most users. The modern version of this security package was implemented with Windows 10 in 2015 and is further improved with Windows 11. I have examined hundreds of computers since 2015 and have never had to remove a virus protected by Microsoft Windows Defender. Before 2015, our club's hardware technicians spent as much as half our time at our Tuesday Repair SIG removing viruses from systems, but this work is no longer necessary.

"Just 15 percent of people use a password manager."

Again, I call BS on this. It is common for club members who come to the Tuesday Repair SIG when asked for their password to, for instance, their Google account to state, "I don't have a password; I just click on Gmail, and it appears." They are unknowingly and effortlessly using a password manager.

Without a password, you cannot use an application such as Gmail or any other mail program. Many users set up a password for Gmail or any other applications when they initiate use of that service or have this done for them by whomever is helping to set up their device.

Many users forget they have the required password because their browser's built-in password manager enters it automatically and seamlessly. Google, Edge, Firefox, and Safari all have integrated password managers with features like autofill and a password generator. They can also store credit cards and other personal information, which makes your online life more manageable. Smartphone operating systems on the Apple iPhone, Samsung Galaxy, etc. also store user credentials.

A password generator will create a unique password, such as "8X!4tZ7pas@vFyY" which is impossible to guess and memorize. A password manager best utilizes this bizarre string of characters. I have seen people write down and manually enter a generated password, but obviously, it is tedious and often takes multiple tries.

Are passwords saved by browsers secure?

Google states, "Google Password Manager and the passwords it generates are considered safe compared to similar password managers. Google uses military-grade encryption to protect your usernames, passwords, and payment information."

Scam Alert

Did a salesperson knock on your door and promise **free rooftop solar panels at no cost to you**? Or say you'll never have to pay another electricity bill because government programs, grants, or rebates cover your solar installation? It's likely a scam. While there are some government-funded solar programs for households that qualify, "going solar" isn't free. Honest businesses will tell you exactly how much it'll cost to get and install solar panels.

Do some research. Avoid solar companies that say a government program will cover the whole cost of solar panels — or say they're from (or affiliated with) the government. These are lies. If you're looking at solar energy for your home, get quotes from reputable providers with a valid license. Then compare them. Check out the Department of Energy's [guide for homeowners and commonly asked questions](#) to learn more.

Don't pay advance fees. Steer clear of anyone promising big savings and demanding large upfront payments or deposits.

Take your time. If someone is rushing you to sign a contract, or insists you sign an agreement on an electronic tablet without showing you the full agreement, stop.

To learn more, visit ftc.gov/solar. And if you spot a scam, [tell the FTC](#).

Microsoft states, "Microsoft Edge stores passwords encrypted on disk. They're encrypted using AES, and the encryption key is saved in an operating system (OS) storage area."

Firefox states, "Firefox Desktop uses simple cryptography to obscure your passwords. Mozilla cannot see passwords, but Firefox Desktop decrypts the password locally so that it can enter them into form fields."

In other words, the "free" password managers built into browsers and operating systems use security schemes that are like paid password managers. Naturally, marketers of these paid-for third-party services, such as Nordpass, Norton, OneLogin, and LastPass, claim built-in password managers are vulnerable.

Unfortunately, third-party password managers have been hacked, severely compromising user information. OneLogin was hacked in 2017, and LastPass was hacked in 2022. In March 2023, LastPass stated that the breach resulted in unauthorized and unknown users gaining full access to customers' vault data, including personal information like usernames and passwords.

Yet third-party password managers urge users to buy their product rather than depend on the security built into browsers and operating systems. But any account or device can be hacked.

Unless you write down your passwords using a pencil and paper, you must trust someone and use a password manager. I would rather trust a massive entity like Google, Microsoft, or Apple over a relatively tiny software provider. Even more prominent entities, such as Norton, have been subject to internal dishonesty and theft of client data.

Use multi-factor authentication (MFA)

This is NOT BS. Multi-factor authentication (MFA) requires users to provide at least two of three categories of authentication to access an account.

1. **Knowledge:** a password or PIN code,
2. **Possessions factor:** a secondary device (i.e., Smartphone) or account you have, in addition to a knowledge factor.
3. **Biometrics:** any part of the human body that can be offered for verification, such as fingerprints or facial recognition.

I only have one account, Interactive Brokers, that *requires* MFA. When I want to access my account, a notification is sent to my iPhone, which opens the Interactive Brokers application on my phone and identifies me using facial recognition. Thus, all three factors of MFA are utilized, which is about as good a set of authentications as you will find today.

Disadvantages of MFA

The second factor, the secondary device or account, is much stronger when a separate device is utilized. Many MFA schemes send

**** Jokes & Quotes Stolen
from Everywhere ****

Political One Liners:

I don't approve of political jokes...I've seen too many of them get elected.

The consensus after the election is that 100% of Americans think 50% of Americans have lost their minds.

People who want to share their religious or political views with you almost never want you to share yours with them.

America is a country which produces citizens who will cross the ocean to fight for democracy but won't cross the street to vote.

Don't steal. That's the government's job.

Politics is the art of looking for trouble, finding it, misdiagnosing it and then misapplying the wrong remedies.

Stop repeat offenders. Don't re-elect them!

A fine is a tax for doing wrong. A tax is a fine for doing well.

What's the difference between a politician and a flying pig? The letter F.

An honest politician is one who, when he is bought, will stay bought.

They say St. Patrick drove the snakes out of Ireland. I wonder if he could do that for Congress.

I remember when Halloween was the scariest night of the year. Now, it's Election night.

a code to an email account, which is useless when that happens to be the account you are attempting to access. Using only an email account for secondary authentication rather than a discrete device, such as your Smartphone, provides weaker security.

MFA can lock you out of your account when your discreet device (phone) is unavailable, runs out of juice, or lacks an internet or cellular connection.

Conclusions and Recommendations

Microsoft Windows Defender runs by default on Windows computers and does not have to be turned on by the user. Microsoft Windows Defender provides excellent antivirus protection.

The password managers provided by browsers and operating systems are reasonably secure. I believe they are similar in security compared to password managers offered by third-party vendors, maybe better. These credentials operate seamlessly with the operating system or browser, making for a much smoother internet experience.

Multi-factor authentication is the way to go if you want absolute internet security. Using the three categories of authentication, knowledge, possession, and biometrics provides some of the best security available today.

Reprinted from the Sun City Summerlin Computer Club,
<https://www.scsccl.com>,
dkretch@gmail.com.

******* BITS and PIECES in the NEWS *******

Editor's Note: To continue reading the following articles, you may copy the long URL at the end of the article and enter it into a web browser **or** click on the URL in the PDF or web versions of this newsletter.

Injured Deep-Sea Jellies Fuse Bodies Together In Animal Kingdom First

By [Adrianna Nine](#) October 7, 2024

The jellies appear to combine their stomachs and nervous systems in a form of fusion not seen in any other species.

Marine and evolutionary biologists have stumbled upon a bizarre discovery: Certain "comb jellies" can fuse their bodies to become one large organism. Upon closer inspection, the marine invertebrates' unexpected capability appears to bolster individual jellies against injury—but regardless of the reason behind the co-mingling, they're the first species on Earth known to unify in this way.

Scientists at the Marine Biological Laboratory (MBL) in Woods Hole, Massachusetts didn't set out to fuse one comb jelly with another. Instead, they were conducting "routine research" on *Mnemiopsis*

Odds and Ends

3D Nanoscale Opticle Disc with Petabit Capacity

The most popular words of 2023 were recently released, with AI Large Language Model (LLM) unquestionably topping the list. As a frontrunner, ChatGPT also emerged as one of the international buzzwords of the year. These disruptive innovations in AI owe much to big data, which has played a pivotal role. Yet, AI has simultaneously presented new opportunities and challenges to the development of big data.

For the first time, researchers have demonstrated that optical data storage capacity can reach the petabit (Pb) level by extending the planar recording architecture to three dimensions with hundreds of layers, thereby breaking the optical diffraction limit barrier of the recorded spots. The storage capacity within the area of a DVD-sized disc can reach up to Pb level, equivalent to at least 10,000 Blu-ray discs or 100 high-capacity hard drives.

The dataset behind GPT, which includes 5.8 billion indexed web pages and occupies about 56Pb of text, would typically require a playground area of hard drives for storage. However, the three-dimensional nanoscale optical disk memory can shrink this space to the size of a desktop computer.

Holy Moly. Read this at <https://en.usst.edu.cn/info/1023/2901.htm>.
Shanghai, China

leidy—a species of comb jelly affectionately called "sea walnuts"—when one of their subjects suddenly went missing. While looking for the sea walnut-at-large, the team noticed that one *M. leidy* was larger than it should have been. It looked like two sea walnuts had fused.

Read this article at <https://www.extremetech.com/science/injured-deep-sea-jellies-fuse-bodies-together-in-animal-kingdom-first>.

New Study Finds Microplastics in All Parts of Coral Anatomy, Highlighting Marine Pollution Crisis

by [Modern Sciences Team](#), October 6, 2024

At a Glance

- Scientists from Japan and Thailand used a novel detection technique to discover microplastics in all three parts of coral anatomy: surface mucus, tissue, and skeleton.
- The study examined coral samples from Si Chang Island in the Gulf of Thailand and found 174 microplastic particles across four coral species, with most particles between 101 and 200 micrometers in size.
- Microplastics were distributed 38% in surface mucus, 25% in tissue, and 37% in the coral skeleton, suggesting that corals may act as a “sink” for microplastics.
- This research may help explain the “missing plastic problem,” where much of oceanic plastic pollution is unaccounted for, as corals could trap microplastics in their skeletons long after they die.
- The findings highlight the urgent need for further research on the effects of microplastics on coral reefs and the broader marine ecosystem, as the health impacts on corals remain largely unknown.

A collaborative research effort by scientists from Japan and Thailand has discovered that microplastics are present in all three parts of coral anatomy: surface mucus, tissue, and skeleton. This groundbreaking finding highlights the extent of plastic pollution affecting marine life and was made possible by a new detection technique applied to coral for the first time. The study was published in the journal *Science of the Total Environment*.

One of the intriguing implications of this research is the possibility that corals might act as a “sink” for microplastics, absorbing them from the ocean environment. The researchers suggest that microplastics could accumulate in coral skeletons, remaining intact long after the corals die, much like insects preserved in amber.

Read more at <https://modernsciences.org/new-study-finds-microplastics-in-all-parts-of-coral-anatomy-highlighting-marine-pollution-crisis/>.

'Worlds-first' Indoor Vertical Farm to Produce 4M Pounds of Berries a Year

By [Bronwyn Thompson](#), September 25, 2024

Major steps towards better, sustainable and affordable food production free of environmental challenges have been taken, with the "world's first farm to grow indoor, vertically farmed berries at scale" opening in Richmond, VA. It's backed by an international team of scientists that see this new phase of agriculture as a way to ease global food demands.

The Plenty Richmond Farm is designed to produce more than four million pounds (1.8M kg) of strawberries grown indoors vertically in 30-ft-tall (9-m) towers, using up less than 40,000 square feet – or less than a single acre. This is a fraction of the land needed in traditional strawberry production, which is also subject to seasonal and environmental factors that limit yield.

The company says the strawberries, from global company Driscoll's, will be on grocery store shelves in early 2025.

Check this out at <https://newatlas.com/manufacturing/world-first-vertical-strawberry-farm-plenty/>.



CLUB and REGIONAL NEWS

Maker Faire, RIT Gorden Field House, Saturday, Nov 16

Maker Faire is a gathering of fascinating, curious people who enjoy learning and who love sharing what they can do. From engineers to artists to scientists to crafters, Maker Faire is a venue for these "makers" to show hobbies, experiments, projects.

We call it the Greatest Show (& Tell) on Earth - a family-friendly showcase of invention, creativity, and resourcefulness. Glimpse the future and get inspired!



Got Questions?

Send an email to either person below and they will get back to you. The questions can be related to the OS (Operating System) or hardware related issues. Please give them time for a response, as they do this service on a volunteer basis. Thank you.

Windows OS: Arpad Kovacs, podcomputer@gmail.com

Linux & some Mac: Carl Schmidtman, unixgeek@faultline.com

Our Meeting Place
St John's Meadows at
Johnsarbor Drive, is on the left,
past Clinton Avenue, when
going West on Elmwood
Avenue. The opening in the
white fence is Johnsarbor
Drive. At the 'T', turn right.
The meeting is in the **SECOND**
building on the left –
Chestnut Court.

www.rcsi.org