

> PC Update Nov 2025



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The newsletter of

Melbourne PC User Group

Suite 26, Level 1, 479 Warrigal Road Moorabbin 3189

Office hours 9.30am – 4.30pm (Mon-Friday)

Email office@melbpc.org.au

ABN 43 196 519 351

Victorian Association Registration A0003293V

Editor Malin Robertsson (office@melbpc.org.au) (editorpc@melbpc.org.au)

Committee: **David Stonier-Gibson** (President), **David F Evans** (Vice President), **Kirsten Greed** (Secretary), **Peter McConnachie** (Treasurer), **Rob Brown**, **Michael Adams**, **Troy Filer**, **Richard Bradford** (committee@melbpc.org.au)

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iHelp – Get the help you need with your computer, Ph: (03) 9276 4088,

Email: ihelp@melbpc.org.au, [Online Support Request](#)

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Editorial November 2025

Malin Robertsson

November 2025 Editorial – PC Update Magazine

Welcome to your monthly dose of tech wisdom, digital curiosity, and practical know-how — all wrapped up in the November issue of *PC Update Magazine*.

Why is photographing the moon with your phone so frustrating? We explore the optical illusions, sensor limitations, and clever tricks that explain why your moon pics never look like what you see with your eyes.

Brains, games, and invisible scoreboards. Even in the simplest games, our minds track wins and losses — and those mental scores quietly shape our decisions in everyday life. Find out how.

Australia's AI divide is growing. A new national survey reveals stark differences in how Australians access, understand, and benefit from artificial intelligence. What does this mean for the future of tech equity?

The September East SIG Report

This month's East SIG Report is packed with insights, fixes, and tips from our expert contributors:

Q&A by George Skarbek

Options for Windows 10 users by Dave Botherway

AI Browser Security Issues by Frank Maher

All in One Windows Repair Solution by Frank Maher

Windows 11 Home vs Windows 11 Pro by Frank Maher

RAM (Random Access Microbytes) Topics of Interest by Peter Carpenter

How to Download your photos from Google Photos, highlighting the nuisance features of Google Takeout by Peter Carpenter

Happy Reading all!



From the President, November 2025

David Stonier-Gibson

The club has a new management committee as of the AGM on the 5th of November. The members are:

Executive members

David Stonier-Gibson, President

David Evans, Vice President

Kirsten Greed, Secretary

Peter McConnachie, Treasurer

Regular members

Michael Adams

Troy Filer

Richard Bradford

Rob Brown

Rob was not actually elected at the AGM because he was overseas and had omitted to nominate, but in accordance with the rules he was formally appointed as the first item of business in the November committee meeting.

Operation Reboot

I spend a lot of my time pondering the future of Melb PC, and how we can thrive and stay relevant in an ever changing technological landscape. There have been many starts on transforming the club over the years, with stated good intentions but weak follow-through. Membership is slowly dwindling, along with our resources. It's happening very slowly, but it is happening. I remember when I first joined the committee about 10 years ago that the prediction was we'd be dead in the water by 2022. Well, that didn't happen. But as our membership ages the chances of dropping off a sudden cliff undoubtedly increase. One thing is for sure: If we don't start acting decisively we could get into an impasse where the government eventually dictates the disposal of our remaining assets.

With that in mind, I put it to the first meeting of the new management committee that we adopt, as a policy, the resolve to henceforth act boldly and proactively to transform the club into something relevant to the 21st century - and that to do so we will be prepared to invest heavily in the future. In short, we must be prepared to break some eggs.

What we will be aiming to achieve is to transform the club into an organisation that provides value to our local communities by providing a space where people with a technology bent can express their creativity. In the modern context that means becoming a maker space and a venue where similarly minded people can get together.



If you are unfamiliar with the term, a maker space (or makerspace, a.k.a. hackerspace) is a place that has a range of equipment and facilities where people can come and “make things”. The things can be toy robots, garments, vases, jewelry, electronic gizmos, just about any artifact. The equipment can be 3D printers, vinyl cutters, laser engravers, soldering irons, maybe even 4 dimensional confabulators. The makerspace movement is huge - just see what comes up on YouTube - and can lean in many directions. For example there is a Bayside Makerspace that seems to be almost exclusively around one hobby level cutting/plotting machine called Cricut, that can be used for a range of

craft projects. Monash University has a large makerspace with some very fancy machinery, though I am told there is so much demand that students can have trouble accessing machine time (aka a target market for us!). We have an embryonic Maker Room with electronics and 3D printing, a lathe and milling machine downstairs in the “garage”, and a CNC machine under construction.

[YouTube about one of several large maker/hackerspaces in San Francisco](#)



The Cricut machines can do much more than just cutting out labels!

Having, or should I say *being* a makerspace sets us up as the perfect host or collaborator for certain organisations with focused target demographics. In fact, we are already in a collaboration with a local Mens’ Shed, where they are helping us make a showpiece attraction for Moorabbin (a Tardis) in return for a leg up with 3D printing, and we have already hosted sessions for an organisation for budding young entrepreneurs called STEM Incubators.

The transformed club is visualised as having three aspects or components:

1. The legacy Melbourne PC user Group, with all the traditional member services such as iHelp, email for long term members (we have already phased that out for new sign-ups), the traditional SIGs, monthly meetings, etc. I consider that to be sacrosanct, holy cows that shall not be messed with.
2. A well equipped makerspace where members can access the kinds of equipment they are unlikely to be able to accommodate or afford at home.
3. A venue that is accessible to other local groups and associations with technology based interests.

There is a lot of overlap between the last two items. One thing that is very clear is that they are both bound to our geographic location. We are headquartered in Moorabbin, and Moorabbin is where all the physical action is going to be.

Our new management committee member, Troy Filer, well and truly paid for his keep by suggesting we bestow a name on this policy. I asked my AI sidekick for suggestions, and of the several ideas we selected *Operation Reboot*.

I believe having a name to underpin the undertaking is a powerful psychological tool to getting actions started and sustained.



*So of course I had to generate a graphic to go with the name.
A bit AI-tacky, but it's only for inhouse consumption.*

There will be several major sub-operations to Operation Reboot:

Updating the premises

There is a lot of work needed to prepare our club rooms for their future life. Upstairs we need to find a larger space for a lot more equipment, and to also host future events. We may very well end up building or tearing down walls. Downstairs the “garage” needs a serious do-over for lighting, power, and possibly décor a.k.a. paint job. The server room has great potential for housing smelly/messy machinery such as a resin 3D printer or laser cutter.

Equipment

We have an aspirational list of maker equipment that includes laser cutter/engravers, various types of 3D printer, sewing machines, cutter/plotters, screen printing fixtures, vacuum former, electronics instruments and hand tools, in addition to the things we already have. None of this is a hard and fast list - we have to aim to have one or two champions for a new technology before investing in it.

Marketing

We have agreed that there will be a substantial marketing budget, and we will employ professional help where needed (does any member have social media marketing skills and a willingness to contribute?). There's a bit of a chicken and egg conflict here, in that you need something to market before you can market it. The very first step in that direction has been taken: We have registered moorabbinmakerspace.org.au and the business name Moorabbin Maker Space (that URL link is not yet active). The melcc logo will be retained



The business model

We have an amazing advantage over anyone else wanting to start a makerspace; We own our own premises, and we still have a quite healthy bank balance. That means we can set up our facility without having to worry about where the capital comes from. In terms of cash flow and operating expenses, consider this: Established makerspaces charge monthly membership fees similar to our annual membership. That means that we have a huge amount of “headroom” for upping the charges for access to the makerspace as we build it out. So a few

years from now we could have a club that is thriving with fewer than half the number of members we have now, with enough surplus to also be serving a very valuable social function.

What about Agile Evolution?

Not long ago I floated the concept of Agile Evolution. Have I done a 180? No, not at all. Within Operation Reboot there is plenty of scope for trying out different ideas, and seeing which ones work. What's important is that we are willing to try new things, and to break some eggs.

My email "sig file":

David Stonier-Gibson, President

Melbourne PC User Group

Moorabbin Maker Space

Don't tell me why we can't do it

Help me make it happen

Why is it so hard to take a good photo of the Moon with my phone?

Michael J. I. Brown

It's a beautiful clear night. The stars are out and the Moon looks breathtaking against the sky, so you reach for your phone to take a snap. The results are, to be blunt, disappointing.

Try again. Steady your hands, focus on the Moon, take a photo and... it's another underwhelming white smudge against a dark background. Hardly Instagram-worthy.

Phones often take superb photos, but why do they struggle with the Moon? It's a little bit to do with what we are photographing, and a little bit to do with phone camera technology.

It's not actually night

The first mistake novice astrophotographers make is assuming it is night time. Sure, it may be night time where you are on Earth but is it night time on the Moon?



Got a few pics like this on your photo reel? M. J. I. Brown, [CC BY](#)

When you take a snap of the Moon, you are photographing its sunlit side. In other words, you are photographing broad daylight. Regardless of your camera, this means your settings should be similar to those for daytime photography rather than nighttime photography.



Not very impressive. M. J. I. Brown, CC BY

Phones typically automate photography, including focus and exposure time. Unfortunately, this means that when the Moon is seen against a vast dark sky, the exposure time is set by the dark sky rather than the Moon. This means we turn the Moon into an overexposed bright smudge.

The easiest way to get around this problem is to photograph the Moon during the daytime. With a bright blue sky as the background (technically the foreground) your phone will use a suitably short exposure and you'll likely get a better picture.

Another way to prevent over-exposed phone photographs is to dial down the exposure time manually, if you can.

So, you tried all that and the pics still look pretty average? Even with the right exposure time and good focus, phone photos of the Moon aren't great and often don't capture detail well.

This comes down to the design of phone cameras.

A wide view

Phones are great at taking photos of nearby objects (selfies, anyone?) and sweeping vistas. For example, some phones can take photos of the horizon that span from due north to due east – that's a 90-degree field of view.

Unfortunately, the Moon (which is just half a degree across in the sky) gets lost in such an image. This comes down to the design choices that allow a camera to fit into a standard mobile phone.

Cameras and telescopes focus light coming from different directions onto detectors, be they old-fashioned photographic film or modern digital sensors with pixels.

The detail you see depends on the size of the pixels and the focal length; for a simple lens this is roughly the distance from the lens to the detector.

Phone camera lenses have focal lengths of a few millimetres, and the sensor pixels are thousandths of a millimetre in size. For a typical phone each pixel receives light from an angle of about 0.02 degrees – and since the Moon is 0.5 degrees across in the sky, its image ends up being only 25 pixels wide.

An image just 25 pixels wide is not going to have much detail. Phone camera software may add more pixels, attempt to sharpen the image or interpolate to add pixels, but this won't add real detail to your Moon pic.

Zooming in and out

The obvious solution is to zoom in to get a more detailed image of the Moon.

For conventional cameras this is done with a zoom lens where the focal length can be increased (for example, from 50mm to 200mm). However, in phones the zoom is typically done digitally (in software) so the physical focal length is unchanged. Your disappointment will thus continue.

However, there is a solution. Why limit yourself to a phone camera lens?

Phones can take photographs with telescopes. Point a telescope at the Moon, hover your phone carefully above the eyepiece and you can get a remarkably good photo. This is because you've used the magnification of the telescope to effectively multiply the focal length of your camera.

Instead of a 6mm focal length you may be working with 300mm. Instead of 25 pixels you may have 1,250 pixels. Now you can have great Moon photos.



Phones are great for sweeping views of the Milky Way and auroras.

M. J. I. Brown, [CC BY](#)

Phone photography using telescopes has really taken off over the past ten years. You can even get special clamps to hold your phone securely to a telescope.



Phones can take great Moon photos when paired with telescopes

M. J. I. Brown, [CC BY](#)

But what if you don't have a telescope handy? Well, instead of trying to zoom in, try zooming out. Remember that phones are great at taking in sweeping vistas.

Your phone may not be great at taking Moon photos, but it can take excellent photos of the Milky Way. And if you're lucky, you can snap photos of rare visitors such as bright comets or [auroras](#).

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Even in a simple game, our brains keep score – and those scores shape every choice we make

Tijl Grootswagers



There's an optimal strategy for winning multiple rounds of rock, paper, scissors: be as random and unpredictable as possible. Don't pay attention to what happened in the last round.

However, that's easier said than done.

To find out how brains make decisions in a competitive setting, we asked people to play 15,000 games of rock, paper, scissors while recording their brain activity.

Our results, now published in [Social Cognitive and Affective Neuroscience](#), found that those who were influenced by previous rounds really did tend to lose more often.

We also showed that people struggle to be truly random, and we can discern various biases and behaviors from their brain activity when they make decisions during a competition.

What we can learn from a simple game

The field of social neuroscience has mostly focused on studying the brains of individual people. However, to gain insight into how our brains make decisions when we interact with each other, we need to use a method called [hyperscanning](#).

With this method, researchers can record the brain activity from two or more people while they are interacting with each other, providing a more real-world measure of social behavior.

So far, most research has used this method to investigate cooperation. When cooperating with someone else, it's useful to act as predictably as possible to make it easier to anticipate each other's actions and intentions.

However, we were interested in decision-making during competition where unpredictability can give you a competitive advantage – such as when playing rock, paper, scissors.

How do our brains make decisions, and do they keep track of the previous actions of both ourselves and the other person?

To investigate this, we simultaneously recorded the brain activity from pairs of players as they played 480 rounds of rock, paper, scissors with each other on a computer. From the resulting 15,000 total rounds across all participating pairs, we discovered that players were not good at being unpredictable when deciding which option to play next.

Even though the best strategy is randomness, most people had a clear bias where they overplayed one of the options. More than half of the players favored “rock”, followed by “paper”, and “scissors” was favored least.

In addition, people tended to avoid repeating choices – they went for a different option on their next round more often than would be expected by chance.

Real-time decisions

We could predict a player's decision about whether to choose “rock”, “paper”, or “scissors” from their brain data even before they had made their response. This means we could track decision-making in the brain, as it unfolds in real time.

Not only did we find information in the brain about the upcoming decision, but also about what happened in the previous game. The brain had information about both the previous response of the player and their opponent during this decision-making phase.

This shows that when we make decisions, we use information about what happened before to inform what to do next: “they played rock last time, so what's my move?”

We can't help but try to predict what'll happen next by looking back.

Importantly, when trying to be unpredictable, it's not helpful to rely on past outcomes. Only the brains of those who lost the game had information about the previous game – the brains of the winners did not. This means overreliance on past outcomes really does hinder one's strategy.

Why does this matter?

Who hasn't wished they knew what their opponent would play next? From simple games to global politics, a good strategy can lead to a decisive advantage. Our research highlights our brains aren't computers: we can't help but try to predict what'll happen next, and we rely on past outcomes to influence our future decisions, even when that might be counterproductive.

Of course, rock, paper, scissors is one of the simplest games we could use – it made for a good starting point for this research. The next steps would be to move our work into competitive settings where it's more strategic to keep track of past decisions.

Our brains are bad at being unpredictable. This is a good thing in most social contexts and could help us during cooperation. However, during competition, this can hinder us.

A good takeaway here is that people who stop overanalysing the past may have a better chance at winning in the future.

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<https://theconversation.com/even-in-a-simple-game-our-brains-keep-score-and-those-scores-shape-every-choice-we-make-267117>

Australia is facing an ‘AI divide’, new national survey shows

Sharon Parkinson

In the short time since OpenAI launched ChatGPT in November 2022, generative artificial intelligence (AI) products have become increasingly ubiquitous and advanced.

These machines aren’t limited to text – they can now generate photos, videos and audio in a way that’s blurring the line between what’s real and what’s not. They’ve also been woven into tools and services many people already use, such as [Google Search](#).

But who is – and isn’t – using this technology in Australia?

Our [national survey](#), released today, provides some answers. The data is the first of its kind. It shows that while almost half of Australians have used generative AI, uptake is uneven across the country. This raises the risk of a new “AI divide” which threatens to deepen existing social and economic inequalities.

A growing divide

The “digital divide” refers to the gap between people or groups who have access to, can afford and make effective use of digital technologies and the internet, and those who cannot. These divides can compound other inequalities, cutting people off from vital services and opportunities.

Because these gaps shape how people engage with new tools, there’s a risk the same patterns will emerge around AI adoption and use.

Concerns about an AI divide – raised by bodies such as the [United Nations](#) – are no longer speculative.

International evidence is starting to illustrate a divide in capabilities [between](#) and [within countries](#), and [across industries](#).

Who we heard from

Every two years, we use the [Australian Internet Usage Survey](#) to find out who uses the internet in Australia, what benefits they get from it, and what barriers exist to using it effectively.

We use these data to develop the [Australian Digital Inclusion Index](#) – a long-standing measure of digital inclusion in Australia.

Generative AI usage in Australia in the past 6 months

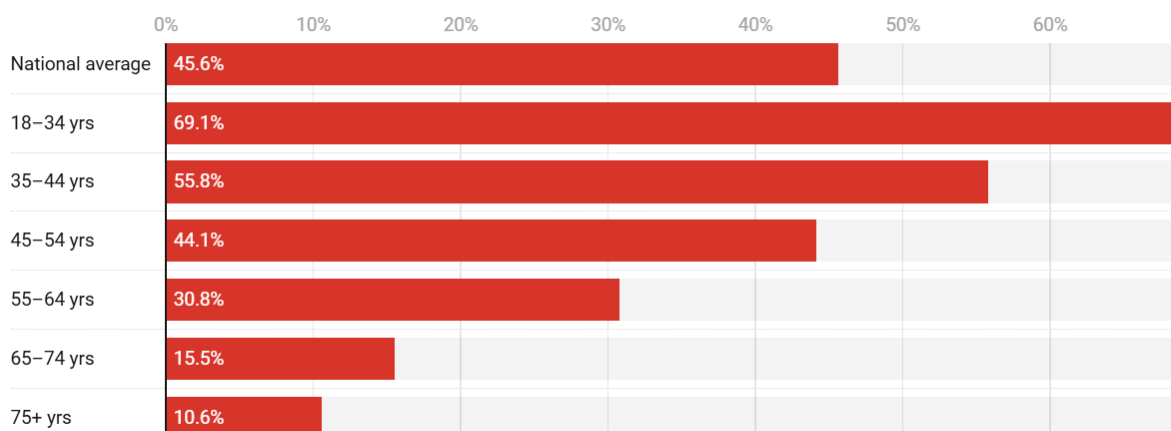


Chart: The Conversation • Source: [Australian Digital Inclusion Index](#) • [Get the data](#) • Created with [Datawrapper](#)

In 2024, more than 5,500 adults across all Australian states and territories responded to questions about whether and how they are using generative AI. This includes a large national sample of First Nations communities, people living in remote and regional locations and those who have never used the internet before.

Other surveys have tracked [attitudes towards AI and its use](#).

But our study is different: it embeds questions about generative AI use inside a long-standing, nationally representative study of digital inclusion that already measures access, affordability and digital ability. These are the [core ingredients](#) people need to benefit from being online.

We’re not just asking “who’s trying AI?”. We’re also connecting the use of the technology to the broader conditions that enable or constrain people’s digital lives.

Importantly, unlike other studies of AI use in Australia collected via online surveys, our sample also includes people who don’t use the internet, or who may face barriers to filling out a survey online.

Australia’s AI divide is already taking shape

We found 45.6% of Australians have recently used a generative AI tool. This is slightly higher than rates of use identified in a [2024 Australian study](#) (39%). Looking internationally, it is also slightly higher than usage by adults in the United Kingdom (41%), as identified in a [2024 study](#) by the country’s media regulator.

Among Australian users, text generation is common (82.6%), followed by image generation (41.5%) and code generation (19.9%). But usage isn’t uniform across the population.

For example, younger Australians are more likely to use the technology than their elders. More than two-thirds (69.1%) of 18- to 34-year-olds recently used one of the many available generative AI tools, compared with less than 1 in 6 (15.5%) 65- to 74-year-olds.

Types of generative AI usage

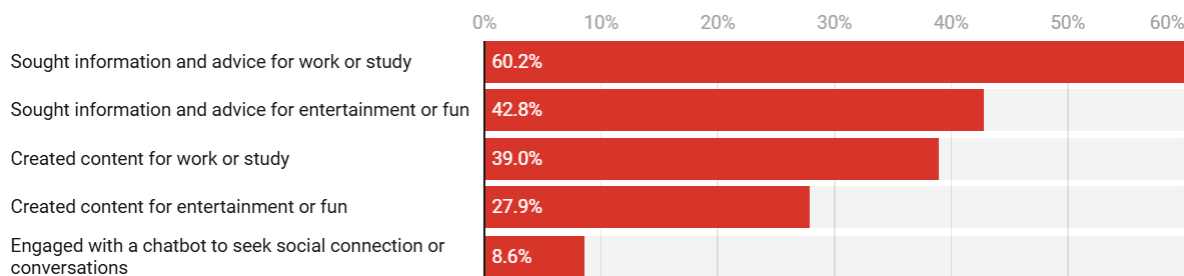


Chart: The Conversation • Source: [Australian Digital Inclusion Index](#) • [Get the data](#) • Created with [Datawrapper](#)

Students are also heavy users (78.9%). People with a bachelor’s degree (62.2%) are much more likely to use the technology than those who did not complete high school (20.6%). Those who left school in Year 10 (4.2%) are among the lowest users.

Professionals (67.9%) and managers (52.2%) are also far more likely to use these tools than machinery operators (26.7%) or labourers (31.8%). This suggests use is strongly linked to occupational roles and work contexts.

Among the people who use AI, only 8.6% engage with a chatbot to seek connection. But this figure rises with remoteness. Generative AI users in remote areas are more than twice as likely (19%) as metropolitan users (7.7%) to use AI chatbots for conversation.

Some 13.6% of users are paying for premium or subscription generative AI tools, with 18 to 34-year-olds most likely to pay (17.5%), followed by 45 to 54-year-olds (13.3%).

Also, people who speak a language other than English at home report significantly higher use (58.1%) than English-only speakers (40.5%). This may be associated with improvements in the capabilities of these tools for translation or accessing information in multiple languages.

Generative AI use by occupation in the past 6 months

Percentage of survey respondents

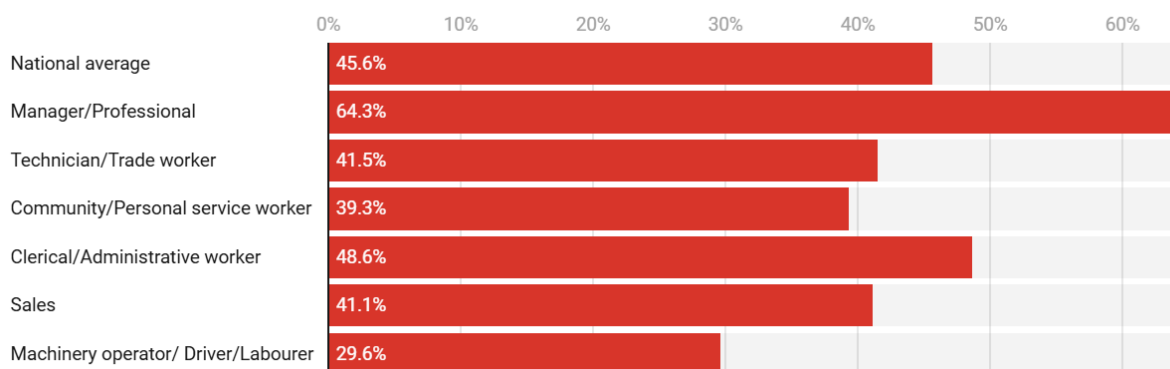


Chart: The Conversation • Source: [Australian Digital Inclusion Index](#) • [Get the data](#) • Created with [Datawrapper](#)

Bridging the divide

This emerging AI divide presents several risks if it calcifies, including disparities in [learning](#) and [work](#), and increased exposure for certain people to [scams](#) and [misinformation](#).

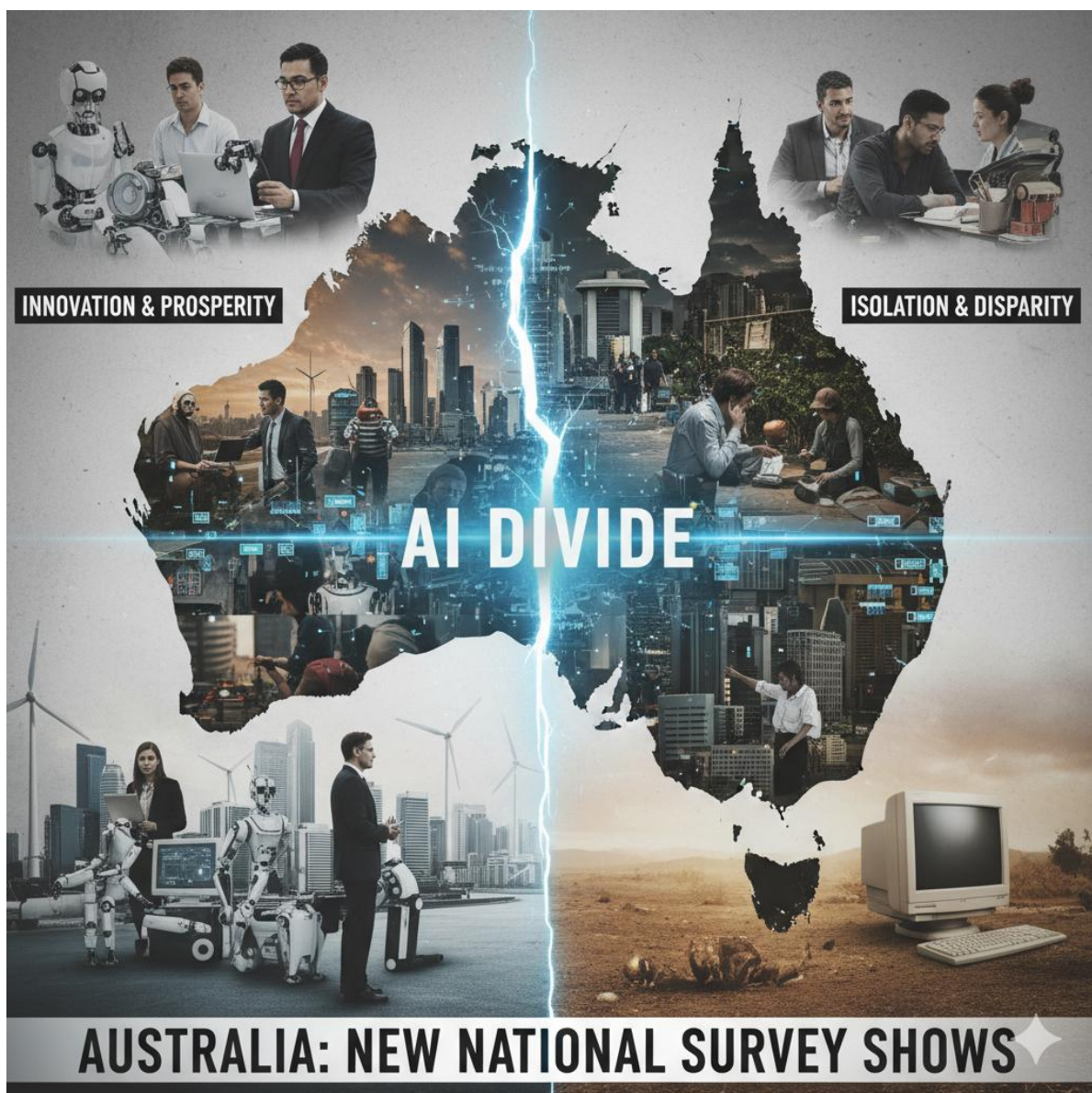
There are also risks stemming from overreliance on AI for important decisions, and navigating harms related to [persuasive AI companions](#).

The biggest challenge will be how to support AI literacy and skills across all groups. This isn't just about **job readiness or productivity**. People with lower digital literacy and skills may miss out on AI's benefits and face a higher risk of being misled by deepfakes and AI-powered scams.

These developments can easily dent the confidence of people with lower levels of digital literacy and skills. Concern about harms can see people with limited confidence further withdraw from AI use, restricting their access to important services and opportunities.

Monitoring these patterns over time and responding with practical support will help ensure the benefits of AI are shared widely – not only by the most connected and confident.

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The debate about net zero ignores the evidence

Michael Keating

Those in the Coalition who are opposed to targeting net zero carbon emissions, argue that it will cost too much. But that claim is false and not supported by the evidence. How can they get away with it?



In the last week or so, since the Nationals dropped their commitment to net zero carbon emissions, the Liberals have been tearing themselves apart over what should be their policy response. The Liberal members of parliament are now expected to meet in Canberra on Wednesday to discuss net zero, with the Shadow Cabinet to finalise the Liberal Party position the next day.

There is much speculation as to whether the Liberals will split over this issue, or whether a compromise will be found. Certainly, the leader, Sussan Ley, has made it clear that there “cannot be net zero at any cost”.

Ley then went on to castigate Labor for what she claimed was a 40% increase in Australian electricity bills since Labor was elected, a bit over three years ago. Ley’s clear implication is that this increase is excessive and is due to Labor’s support for switching to renewable energy, in pursuit of its net zero target.

In effect, Ley is inviting us all to believe that there is a trade-off between reducing carbon emissions and the cost of electricity, and thus the cost of living. But where is the evidence to support this presumption that mitigating climate change may well involve an unacceptable cost to the economy and living standards?

Certainly, Ley and the Liberal Party have provided no evidence in support of this critical contention. But what is even more strange, and disturbing, is that neither the Labor Party nor the commentariat have thought to examine the evidence as to whether renewable energy can only come at a cost to the economy.

This failure to consider the evidence risks the establishment of a public presumption that action to reduce the risks of climate change can only come at a cost, which may or may not be acceptable.

As will be shown below, however, in fact the evidence is that renewable energy is cheaper than fossil fuels. Further, this evidence is readily available, so it is a matter of real concern that it has been ignored so far in the public debate about net zero.

The cost of renewable energy

A couple of months ago, in August, the Climate Council produced a report on “What is the Cheapest Form of Electricity in Australia?”. This report was based on evidence from Australia’s leading energy and science bodies, including the Australian Energy Regulator, Australian Energy Market Operator, Australian Energy Market Commission, and the CSIRO.

The principal conclusion was that “Their analysis consistently shows that renewable power, backed by storage like pumped hydro and batteries, is the most cost-effective way to keep reliably powering Australian homes and businesses”.

Renewables are the cheapest form of power because, unlike fossil fuels, the sun and wind are infinitely and freely available in Australia. In contrast, coal and gas-fired power stations pay international prices for these fossil fuels. Thus, according to the Climate Council Report, “on average in 2024-25, the wholesale price for power from renewables was \$74/MWH – compared to \$136/MWH for power from coal or gas”.

Further, it is the high international price of gas which has played a big part in driving up household power bills over the past few years. According to the Climate Council Report, research from Griffith University “shows that because gas is so expensive, gas prices drive 50-90% of pricing periods in the National Electricity Market”. In addition, outages at coal-fired power stations are responsible for some of the most severe power prices spikes in recent years.

Overall, the CSIRO’s 2024-25 GenCost Final Report found for the seventh year in a row that renewables backed by storage and transmission are the lowest cost new-build electricity generation technologies. A mix of wind and solar cost between \$120 and \$170 per megawatt hour on average in 2024, while the cost of building new gas generation was up to \$199 per megawatt hour.

Already, more than 40% of Australia’s electricity comes from solar, wind and hydro power, and this is rapidly increasing. Further, renewable energy is, in fact, reliable. The Climate Council has found that “a combination of household, community and big batteries and pumped hydro can store excess power when it is available and make it available later on when we need it”.

Also, over time the cost of renewables is expected to fall further: by 2030 the costs of renewable projects are expected to be between \$76 and \$131/MWH. Since 2013, global battery prices have fallen by 86%. In the past year alone, the cost of battery storage has decreased by about 20%, and the cost of large scale solar has dropped by 8% for the past two years in a row.

In future, renewables can therefore help keep power prices in check, whereas if we continued our reliance on coal and gas rather than increasing renewables, the Climate Council estimates that power prices would increase by \$449 a year for households, and \$877 for a small business this decade.

No wonder the Climate Council expects that “Australia’s entire fleet of coal-fired power stations is expected to retire by 2038, and 80% of them will shut down over the next decade”.

Clearly we need to get on with investment in renewable energy projects. Fortunately, the opportunities are being recognised, with the Climate Council forecasting that private investors will invest as much as \$68 billion in renewable energy projects over the next five years. But the biggest risk is that the climate change sceptics succeed in creating so much uncertainty causing investment delays.

Conclusion

The evidence provides overwhelming support for the conclusion that Australia will gain financially from the switch to renewable energy, and that there is no cost to pursuing net zero. Rather the reverse.

Net zero is very much to our economic advantage as well as reducing the risks and consequent costs of climate change.

But that still leaves the puzzling question as to why the debate about net zero emissions in Australia has so far so completely ignored the evidence.

Clearly the Coalition is at fault, as it is considering abandoning net zero. But a competent Labor Government could reasonably have been expected to point out how the evidence does not support abandoning net zero, and the economic advantages that could be expected to flow to Australia.

Frankly, I cannot understand why Labor has preferred to sit on the sidelines in this Coalition debate and has not cited the evidence to support its own policies to achieve net zero emissions. After all, Labor knows that renewable energy is cheaper, and especially so in Australia, as that is the basis for its planned “Future Made in Australia”.

The views expressed in this article may or may not reflect those of Pearls and Irritations.

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<https://johnmenadue.com/post/2025/11/the-debate-about-net-zero-ignores-the-evidence/>

East SIG Report – September 2025

Host Frank Maher welcomed members to the September 2025 East SIG meeting and provided the following outline of the meeting's agenda.

Presentation 1: **Q&A** by George Skarbek

Presentation 2: **Options for Windows 10 users** by Dave Botherway

Presentation 3: **AI Browser Security Issues** by Frank Maher

Presentation 4: **All in One Windows Repair Solution** by Frank Maher

Presentation 5: **Windows 11 Home vs Windows 11 Pro** by Frank Maher

Presentation 6: **RAM (Random Access Microbytes) Topics of Interest** by Peter Carpenter

Presentation 7: **How to Download your photos from Google Photos, highlighting the nuisance features of Google Takeout** by Peter Carpenter

Q&A

with George Skarbek

This month's Q&A session focused on a single question about searching for files and file names in Windows. Several members contributed their preferred methods.

Question: How can I search for files in Windows?

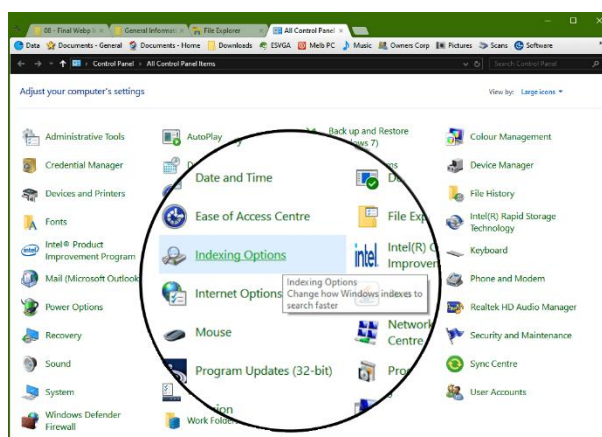
I've been looking for a file I planned to show tonight but can't find it. What are my options for searching in Windows?

Answer:

George: You may already know this, but I'll mention it for the benefit of others.

Open **Windows Explorer** (or press **Windows key + E**) and click on drive C. In the search box at the top right, type in a unique word that might appear in the document you're looking for. Assuming the drive has been indexed, the file should be found within a fraction of a second. You can repeat this for other drives such as D or E. The key is to use a distinctive word, not a common one, otherwise you'll get too many results. Once you have results, sort them by date to narrow things down.

If you have multiple drives, I recommend turning on indexing for all of them. You could exclude areas like *Windows System32* or DLL files, but with indexing enabled, searches are almost instantaneous.



Windows Control Panel – Indexing tool

Trevor Hubson & Peter Carpenter: Both commented that the program *Everything* is very quick and excellent for searching files.

Geoffrey Keenan: I've also used *Everything* and it's very good, but I prefer another program called *WizFile*. *WizFile* is a portable, fast file and folder search program that doesn't build an index like *Everything*. Instead, it reads the **MFT (Master File Table)** directly and displays results instantly. Because it doesn't need to build an index, you can use it immediately after installation. Independent tests show it's faster and use fewer resources than *Everything*.



WIZFILE
FREE DOWNLOAD

George: Thank you, I'll look into it. However, Windows search is already extremely fast if you've indexed your drive. It can find words not just in file names but also embedded in Excel, Word or other documents almost instantly. You can then sort results by date or folder to refine your search. Windows builds the index in the background while giving priority to whatever you're working on.

Geoffrey Keenan: The downside is that indexing constantly runs in the background and consumes disk space. *WizFile* avoids this because it reads the MFT directly and doesn't need indexing.

George: But does *WizFile* search inside files, such as words within Excel documents? Since MFT only lists files, it won't look inside them. That makes *WizFile* unsuitable for content searches.

Geoffrey Keenan: True. For that, there's a program called *Agent Ransack*, a free tool that searches for text within files. It will find single text matches. I've also written my own program that searches ASCII files for text strings. I can even run a second search within the first set of results, which is very useful for programming when looking for routines with specific word combinations.

George: The advantage of Windows indexing is that it's built in and free. If you want to search the content of Excel, Word, PowerPoint or text files, it works very well. By default indexing only covers part of your C drive, so if you also use D, E or other drives, go to **Indexing Options** in Control Panel and add them. You can include entire drives or specific folders. While indexing does use some disk space, with today's large drives the extra few megabytes are insignificant.

Copilot answers: Searching for names within files

Searching for Names Within Files

If you're asking whether Windows Search can locate **specific names or words inside the content of files**—like someone's name in a Word document or a line in a PDF—the answer is **yes**, as long as:

- The file type is supported (e.g., .docx, .txt, .pdf)
- The content is text-based (not scanned images or handwritten notes)
- The folder is included in the indexing settings
- You've enabled "File contents" in search options

How to Enable Content Search

To make sure Windows is searching inside files:

1. Open **File Explorer**
2. Click in the search bar and go to the **Search** tab
3. Select **Advanced options → File contents**
4. Type the name or word you're looking for

This tells Windows to look **inside** files, not just at their names or metadata.

Supported File Types

Windows Search can scan inside:

- Word documents (.doc, .docx)
- Text files (.txt)
- PDFs (if searchable)
- Excel files (.xls, .xlsx)
- HTML, XML, and other structured text formats

For PDFs and other formats, make sure you have the right **iFilter** installed so Windows can read the content.

Pro Tip

To make searches faster and more accurate:

- Go to **Control Panel → Indexing Options**
- Add folders where your files are stored
- Rebuild the index if needed

If you're trying to find a specific name across hundreds of documents, this feature can be a lifesaver. Want help setting it up or testing it with a sample name? I've got you covered.

Copilot explains indexing

What Is Indexing?

Indexing is **not the same** as Windows Search—it's the **engine** that makes search fast and efficient.

Think of it like the index at the back of a book. Instead of flipping through every page to find a word, you check the index and jump straight to the right spot. Windows does the same thing with your files.

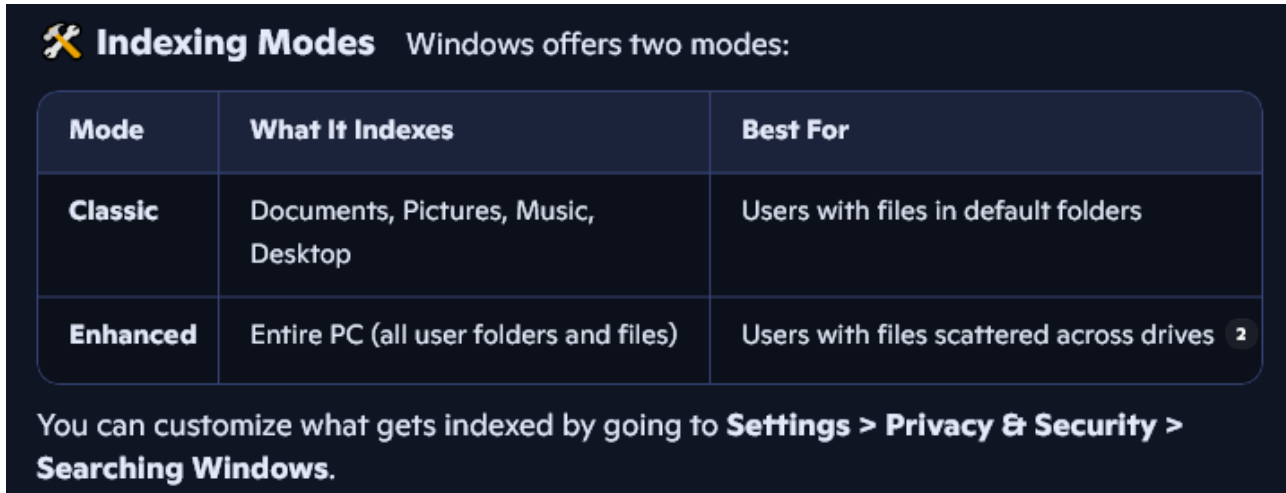
How Does Indexing Work?

Here's how Windows indexing operates under the hood:

- **Cataloging Content:** It scans files, emails, and folders to collect metadata (like file names, dates, and types) and even the contents of documents.
- **Building the Index:** This data is stored in a searchable database. So when you search for "budget.xlsx," Windows doesn't scan your whole drive—it checks the index.
- **Real-Time Updates:** The system constantly monitors changes. If you rename or move a file, the index updates automatically.
- **Prioritized Queues:** Windows uses queues to decide what to index first—high-priority changes (like renaming a file) get indexed immediately.

Indexing Modes

Windows offers two modes:



The screenshot shows the Windows Indexing Modes settings page. At the top, there is a header with a wrench icon and the text "Indexing Modes" followed by "Windows offers two modes:". Below this is a table with three columns: "Mode", "What It Indexes", and "Best For". The table has two rows: "Classic" and "Enhanced". Below the table, there is a text box that says "You can customize what gets indexed by going to Settings > Privacy & Security > Searching Windows."

Mode	What It Indexes	Best For
Classic	Documents, Pictures, Music, Desktop	Users with files in default folders
Enhanced	Entire PC (all user folders and files)	Users with files scattered across drives ²

You can customize what gets indexed by going to **Settings > Privacy & Security > Searching Windows**.

You can customize what gets indexed by going to **Settings → Privacy & Security → Searching Windows**.

Why Indexing Matters

- **Speed:** Searches return results in milliseconds instead of minutes.
- **Efficiency:** Saves system resources by avoiding full disk scans.
- **Accuracy:** Lets you search inside files (like PDFs or Word docs) for specific words.

If you want to tweak or rebuild your index, you can open **Indexing Options** from the Start menu and modify or reset it for better performance.

Want help optimizing your indexing settings for your workflow? I'd be happy to walk you through it.

Options for Windows 10 Users

by Dave Botherway

With Microsoft support for Windows 10 ending on **14 October 2025**, many users are worried that they'll be forced to replace perfectly good computers. This uncertainty has led to confusion, frustration, and the belief that Microsoft is pushing people into unnecessary hardware upgrades.

To address these concerns, Dave Botherway played a video by technology commentator **Leo Notenboom** titled "*No, Windows 11 is not Forcing You to Buy a New Machine*". In the video, Leo explains the situation clearly and outlines the options available to Windows 10 users. His message should reassure those anxious about the future of their computers.



YouTube · Ask Leo!

244K+ views · 5 months ago

No, Windows 11 is not Forcing You to Buy a New Machine



<https://askleo.com/179314> Subscribe to the Ask Leo!

YouTube channel for more tech videos & answers: <https://go.askleo.com/>... ✓ Watch ...

Summary of Leo's Video

- **No one is forcing you to buy a new PC.** Your Windows 10 machine will keep running after support ends in October 2025. The only change is that Microsoft will stop releasing bug and security fixes.
- **Security software will still work.** Windows Defender and most third-party antivirus programs will continue to receive updates. Other Microsoft software (like Office) and third-party programs should also keep working for years.
- **Main options for users:**
 1. **Keep using Windows 10.** Stay on your current computer, but be extra careful with security.
 2. **Extended Security Updates (ESU).** Microsoft will sell an additional year of security fixes for about US\$30 (refer to East SIG August meeting report).
 3. **Switch to Linux.** Free, runs well on older hardware, but requires learning a new system and finding alternative software.
 4. **Hack Windows 11 onto unsupported hardware.** Possible, but updates may not always work, so it carries risks.
 5. **Buy new hardware.** Options include a Windows 11 PC, a Mac, or a Chromebook. This is a choice, not a requirement.

Conclusion

Don't panic and don't throw away good hardware. If your Windows 10 computer is working well, the simplest option is to keep using it. In time, you may naturally upgrade when your needs or hardware change, but there is no immediate pressure.

Reference

YouTube channel: Ask Leo!

Video title: No, Windows 11 is not Forcing You to Buy a New Machine.

URL: <https://www.youtube.com/watch?v=g1BzpPXCLHU>

AI Browser Security Issues

by Frank Maher / Paul Woolard

AI Browsers Could Leave Users Penniless

The following is a summary of the Malwarebytes Labs report by Pieter Arntz



AI-powered browsers are beginning to emerge, offering users help with searches, summarising content, and even completing tasks automatically. But with this convenience comes a serious risk called **prompt injection**.

Prompt injection is a form of attack where malicious instructions are hidden inside web content—sometimes in ways invisible to human eyes, like white text on a white background. While traditional hacking relies on code, prompt injection manipulates the language an AI processes, tricking it into doing something unintended.

The danger escalates with *agentic browsers*—those able to take over entire workflows such as booking flights or making purchases on the user’s behalf. Brave, the developer of the Leo AI browser assistant, demonstrated that attackers could exploit these systems to steal credentials or drain bank accounts simply by embedding hidden prompts in websites or PDFs. In testing, vulnerabilities were found in Perplexity’s Comet browser, which still hasn’t fully closed this loophole.

To stay safe when using AI or agentic browsers:

- Limit the permissions and sensitive information you grant.
- Verify sources and avoid automatic interaction with unfamiliar sites.
- Keep browsers and AI tools updated.
- Use multi-factor authentication and monitor activity logs.
- Don’t fully automate high-stakes transactions—retain human oversight.
- Report suspicious browser behaviour promptly.

AI browsers promise convenience, but until prompt injection risks are better managed, users should proceed with caution—especially when money or personal data is involved.

After reading the Malwarebytes article, Frank Maher further investigated using Gemini. He confirmed that for Gemini to work effectively, the user must grant it access to their calendar and other apps on the computer. This introduces another potential vulnerability, as you have to give the AI this access up front. While Gemini or ChatGPT weren’t specifically mentioned in the Malwarebytes report, this is another trap users should be aware of.

All in One Windows Repair Solution

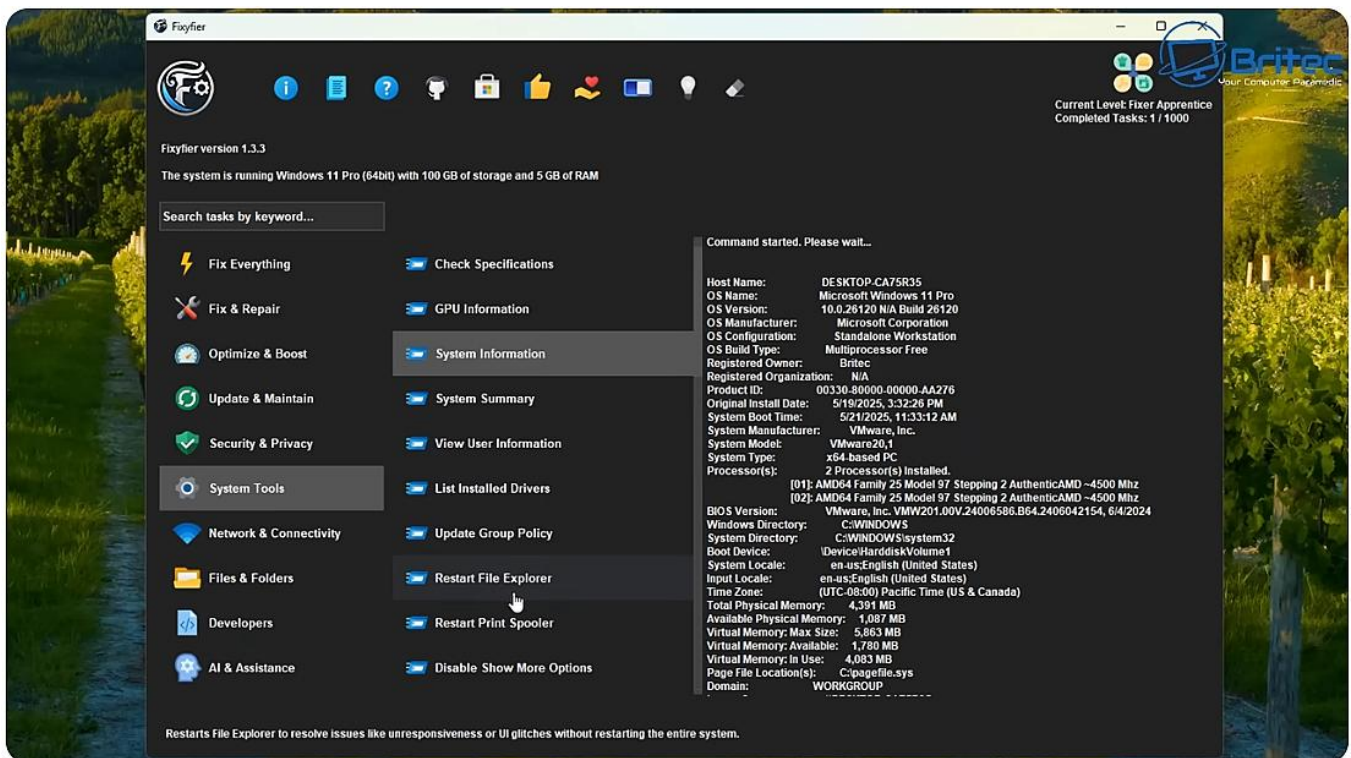
by Frank Maher

Frank Maher presented a video titled “All-in-One Windows Repair Solution” by Brit09, showcasing a versatile utility called **Fixyfier**. This tool consolidates a broad array of Windows repair and maintenance functions into a single, user-friendly interface. Rather than navigating complex menus, entering commands, or manually editing the registry, users can access many common fixes quickly and efficiently, all in one place.

The free application, available from the Microsoft Store, is properly registered, which means Windows will not block its installation. Once installed, it offers an easy-to-use graphical interface with clear icons, tooltips, and even a dark mode option.

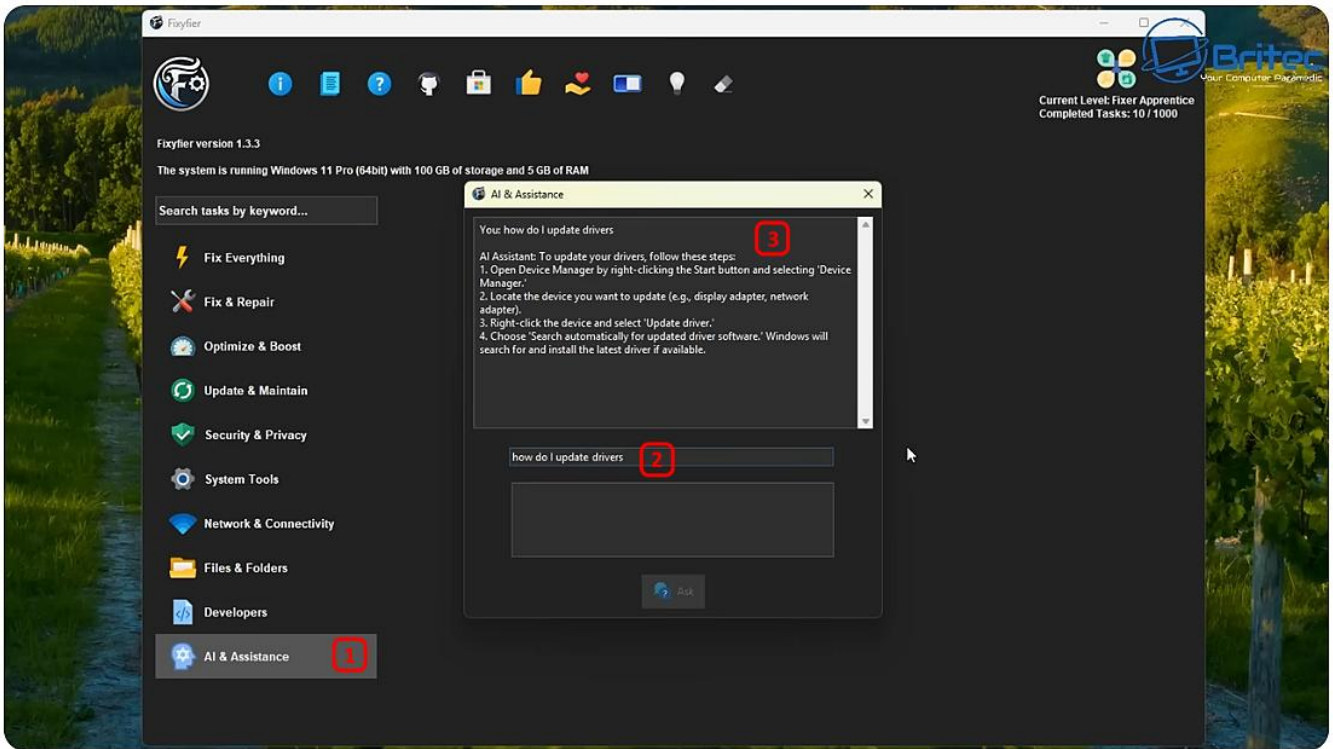
Main features covered in the video include:

- **System tools:** Access system information, driver details, restart Explorer or printers, update group policy, launch uninstaller, check internet connectivity, and even reboot into the BIOS with a single click.



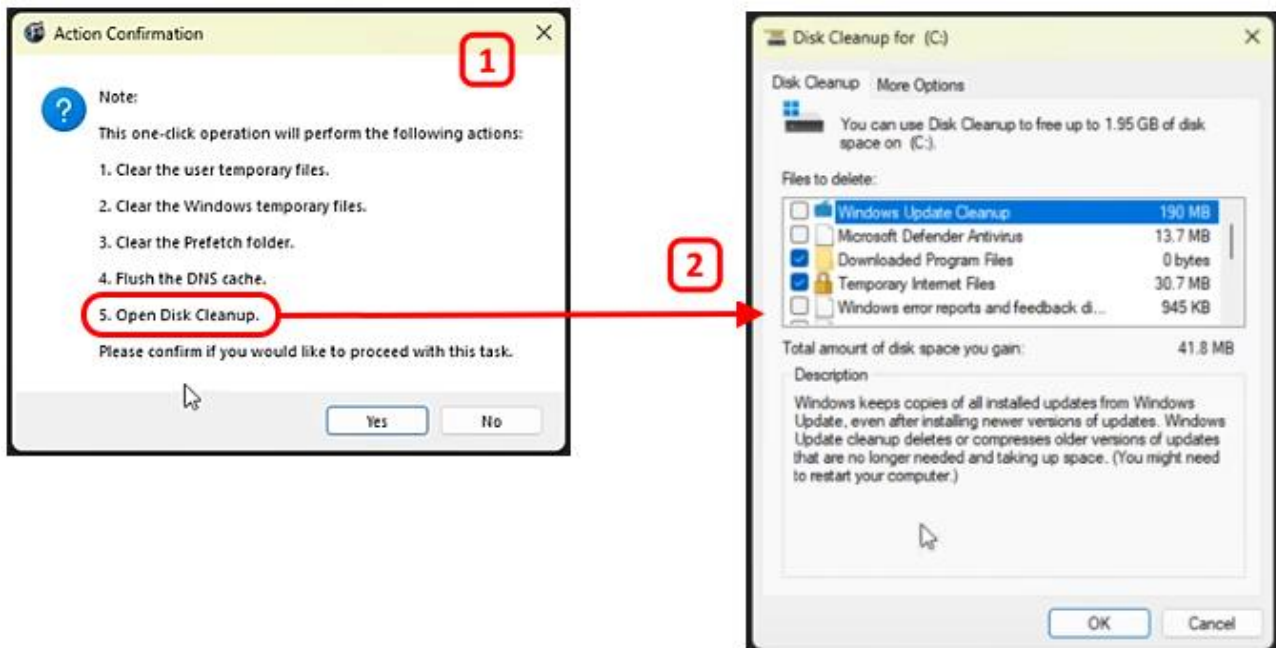
FixyFier System Tools

- **Shortcuts:** Quick access to services, disk management, device management, group policy, and user accounts – saving time compared with Windows 11’s layered menus.
- **AI assistant:** Built-in help for common problems such as updating drivers, booting into safe mode, or fixing network issues – useful for less experienced users. (Update – this tool has been removed in later versions of Fixyfier.)



FixyFier Ai & Assistance Tool

- **Fix everything button:** One-click cleanup of temporary files, DNS cache, and general clutter.



FixyFier Fix Everything Tool

- **Repair tools:** Run Check Disk, DISM, memory diagnostics, and other Windows troubleshooters without typing commands.
- **Optimisation:** Clear caches, wipe free disk space, and manage partitions.
- **Update and maintenance:** List installed programs, pin/unpin apps, and update all software at once.
- **Security and privacy:** Toggle firewall, Smart App Control, BitLocker, Hyper-V, ads, lock screen and Start Menu suggestions, and create or restore system restore points.

- **Network tools:** Flush DNS, reset TCP/IP, renew IP addresses, and manage remote desktop connections.
- **Files and folders:** Lock, hide, unhide, or force-delete files/folders with a couple of clicks.
- **Developer options:** Create simple one-click batch files for automation.

Conclusion:

This software centralizes essential Windows repair functions, allowing you to efficiently restore, tweak, and resolve various system problems. Designed for both IT professionals and everyday users, *Fixyfier* helps repair and tweak your system's functionality without the complexity of navigating multiple settings or external tools. With *Fixyfier*, you can quickly address problems such as network issues, system file corruption, and other functionality disruptions, all from a single, unified interface.

Fixyfier a well-designed and practical tool, especially for those who are not confident with command-line operations. Even experienced users may appreciate the convenience of having multiple repair, clean-up, and configuration options gathered in one central place – and best of all, it's free.

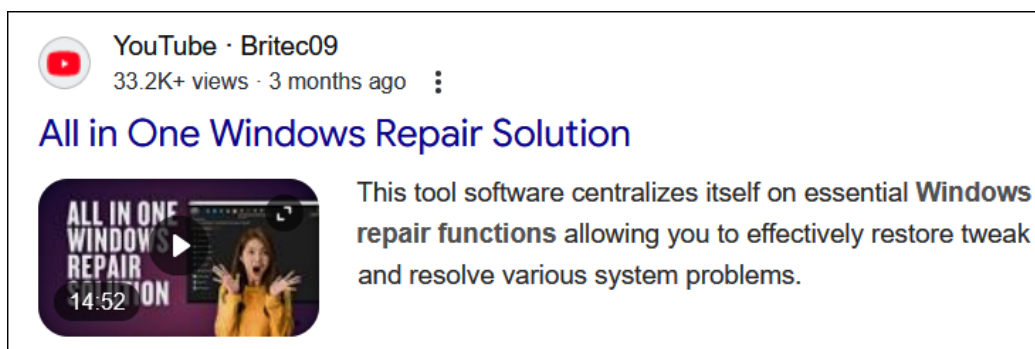
Reference

YouTube channel: Britec09

Video title: All in One Windows Repair Solution

URL: https://www.youtube.com/watch?v=lYoCd_Pbx-g

Download: Microsoft store or <https://www.majorgeeks.com/files/details/fixyfier.html>



All-in-One Windows Repair Solution YouTube Banner

Windows 11 Home versus Windows 11 Pro

Introduced by Frank Maher

Given all the uncertainty around *Windows 10* pending end of support and *Windows 11* as a replacement, Frank played a short video explaining the differences between *Windows 11 Home* and *Windows 11 Pro* editions. If you're unsure which version you need, the video outlines what each edition does and doesn't include. Frank's view is that most users won't need the Pro version, but the video provides useful information to help you make up your own mind.

Frank introduced a video by Leo Notenboom of Ask Leo! YouTube channel comparing Windows 11 Home and Pro editions.



Summary of Main Points

- **Core Features:** Both Home and Pro share the same core Windows 11 experience – Start menu, Taskbar, default apps, gaming features, Windows Update and Security.
- **Pro-only Features** most relevant to consumers:
 - **BitLocker** – Pro gives full control of disk encryption; Home has limited, hidden device encryption.
 - **Group Policy Editor** – included in Pro, making system tweaks easier; Home users must edit the Registry.
 - **Remote Desktop Host** – Pro allows full remote access; Home requires third-party tools like TeamViewer or Chrome Remote Desktop.
 - **Hyper-V Virtualisation** – Pro can create and run virtual machines; Home requires third-party software.
- **Other Pro Features** (less relevant to home users) include Assigned Access/Kiosk mode, Active Directory/Azure AD integration, and Windows Update for Business.
- **Who Should Choose Home:** Ideal for casual home users, families, and gamers. It's cheaper and fully adequate if you don't need the extra Pro features.
- **Who Should Choose Pro:** Best for those needing remote access, better encryption management, virtual machines, or easier system tweaks.
- **Upgrading:** Moving from Home to Pro is simple via the Settings app and Microsoft Store. Downgrading requires a full reinstall.

Conclusion

Leo has long favoured Pro for its extra control and flexibility, but recognises that most home users will find Windows 11 Home more than sufficient – and better value.

Reference:

YouTube Channel: Ask Leo!

Video title: *Windows 11 Home vs Windows 11 Pro - Whats the Difference and is it Worth it "*

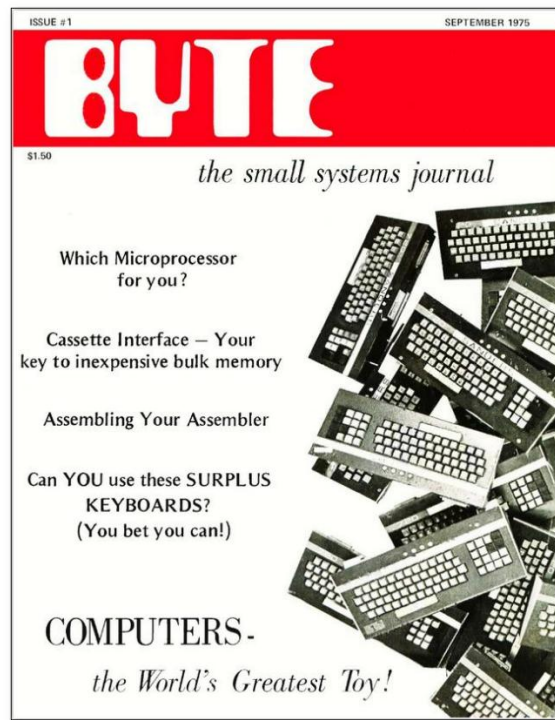
URL: <https://www.youtube.com/watch?v=Yde50FmKSDk&t=251s>

RAM (Random Access Microbytes) Topics of Interest

by Peter Carpenter

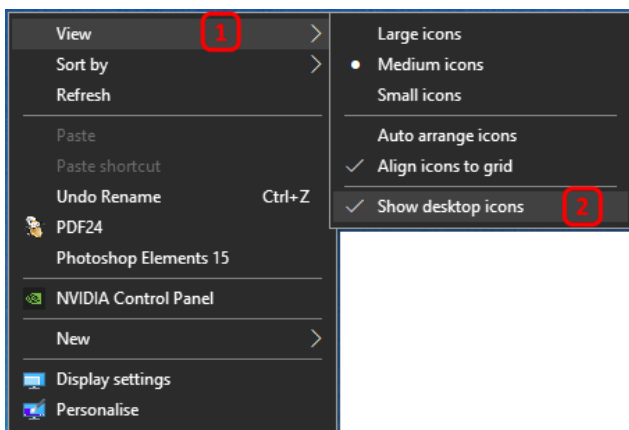
BYTE magazine

Fifty years ago this month, the first issue of computer magazine BYTE, selling for \$1.50, declares “**COMPUTERS – The World’s Greatest Toy!**”.



Clean Desktop

To see a clean desktop right click and from the context menu, select “View” and untick “Show desktop icons”.



Blue LEDs proved almost impossible to make

Peter Carpenter teased his audience by showing the introduction to a video about the creation of the blue LED. He described the story—and its aftermath—as fascinating, and strongly recommended it to members as well worth watching.

The video begins by debunking the myth that an LED’s colour comes from its plastic casing. In reality, the colour is determined by the internal electronics; the casing simply helps distinguish one LED from another.

In 1962, General Electric engineer Nick Holonyak developed the first visible LED, which emitted a faint red glow. A few years later, engineers at Monsanto produced a green LED. For decades, these were the only two colours available, limiting LEDs to applications such as indicators, calculators, and watches.

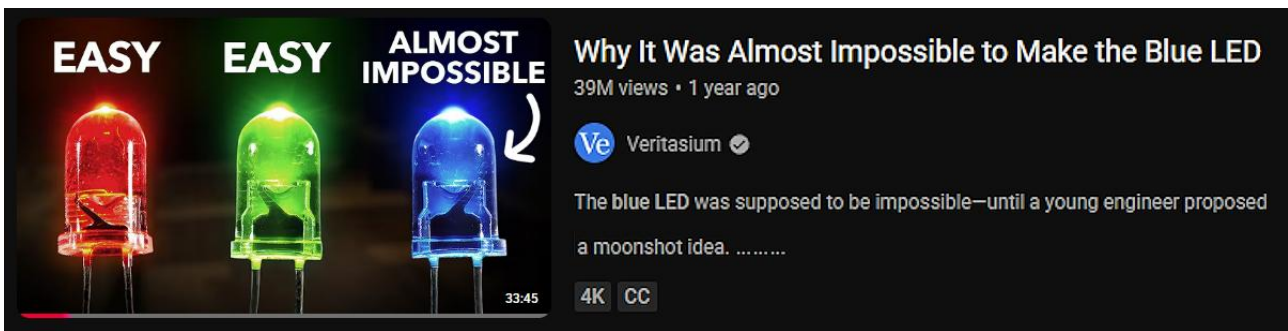
The need for a blue LED was critical. With red, green, and blue, it would be possible to mix light to produce white and every other colour—unlocking the potential of LEDs for general lighting, from bulbs to phones, computers, TVs, and billboards.

Creating a blue LED, however, proved extraordinarily difficult. It took another 30 years before Japanese researcher Shūji Nakamura, working at a small chemical company called Nichia, made the breakthrough that had eluded thousands of researchers at much larger firms. Watch the video to see how the story unfolds and what happens in the aftermath.

Reference:

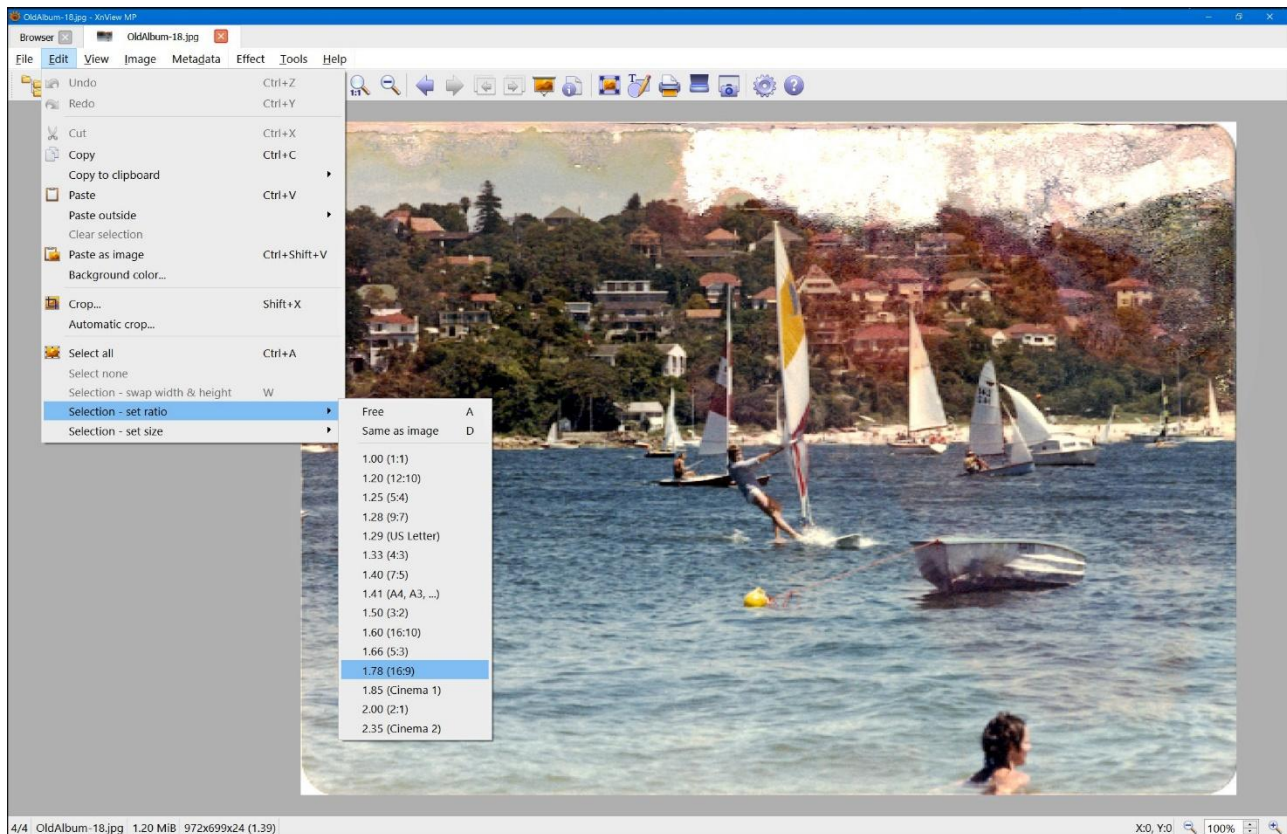
Video Title: *Why It Was Almost Impossible to Make the Blue LED* by Veritasium

URL: <https://www.youtube.com/watch?v=AF8d72mA41M>



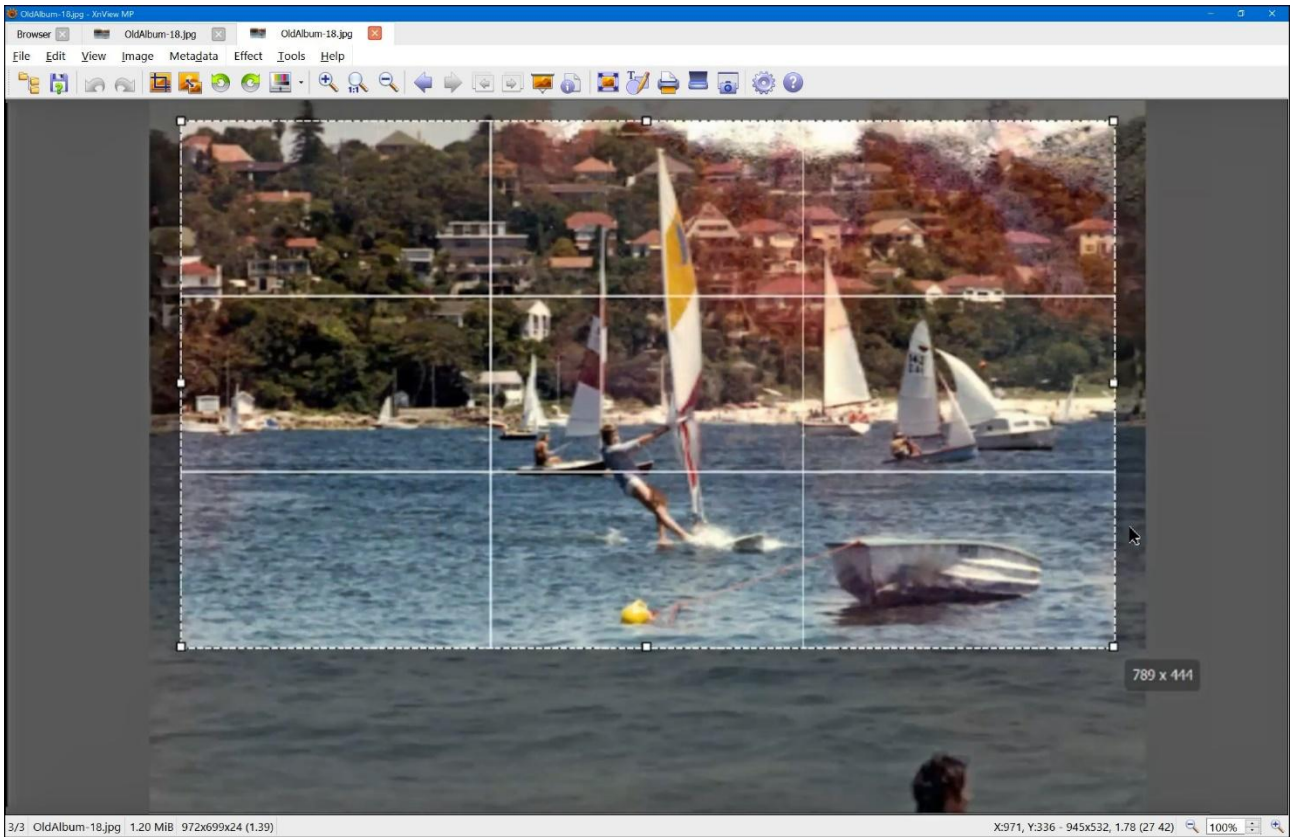
XnView still an excellent choice

Like many of us, Peter grew up with a favourite program which he knew inside out, in his case, the image editing tool XnView. Although he's recently adopted FastStone Image Viewer, he still turns to XnView for specific tasks. One such task, which he demonstrated, is cropping images to a fixed aspect ratio—specifically 16:9, as shown in his example below.



In the following image the cropping panel in XnView can be freely dragged, resized smaller or larger, but it maintains the set 16:9 ratio throughout.

Peter demonstrated **XnView MP**, where “MP” stands for **Multi-Platform**. The program is freeware and available for **Windows, macOS, and Linux**, and can be downloaded from <https://www.xnview.com/en/>



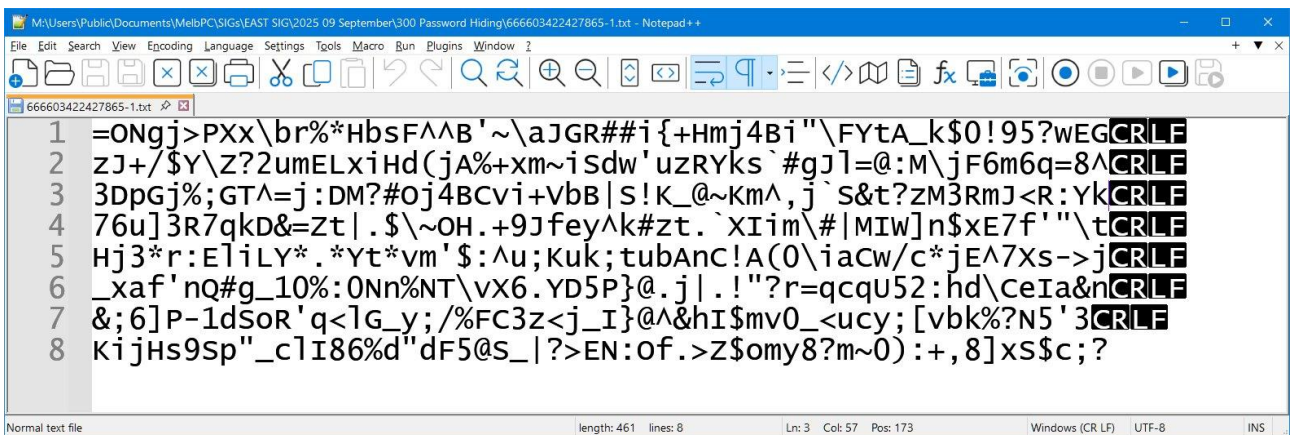
Password Hiding in Plain Sight (April 2025 Update)

At the April meeting Peter outlined a strategy he uses to quickly remember big, long and complex master password for his password manager KeePass. To recap Peter’s technique:

Peter’s solution:

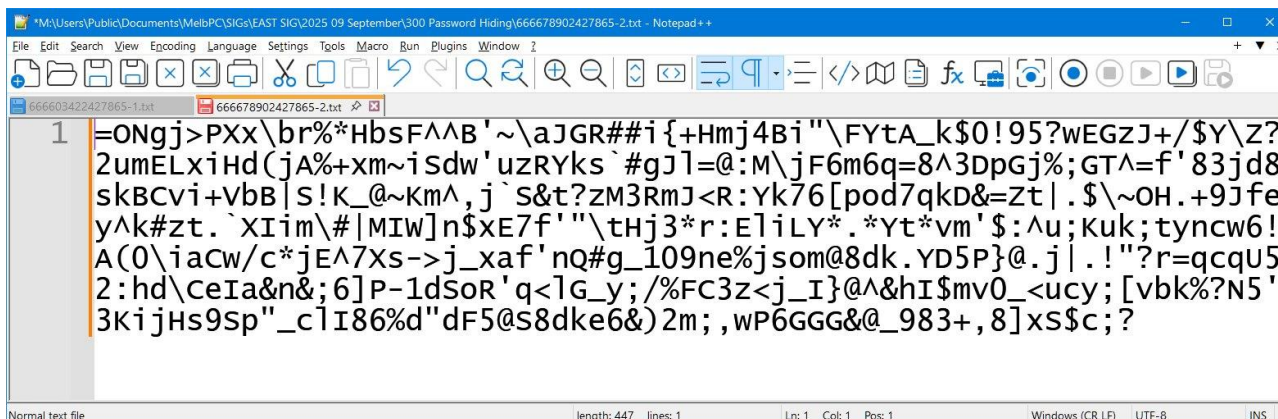
Peter created a file full of random characters using Total Commander’s random function. Within this file, he subtly embeds his master password. When he needs it, he:

1. Opens the file
2. Highlights and copies the password
3. Pastes it into his password manager Bitwarden (a Firefox add-on) to Open Bitwarden
4. Deletes the password from the clipboard manager to remove traces of the master password.



Multiple Lines of random characters with Discontinuities.

The flaw in Peter’s first approach was not realizing that each line—or block of random characters 80 characters long—contained a line break at the end (CRLF, as shown in the image above). This introduced artificial breaks, making the strategy less secure. Peter has since removed the line breaks using Notepad++ resulting in a single continuous string of random text. The same result can be achieved by enabling Word Wrap in Windows Notepad.



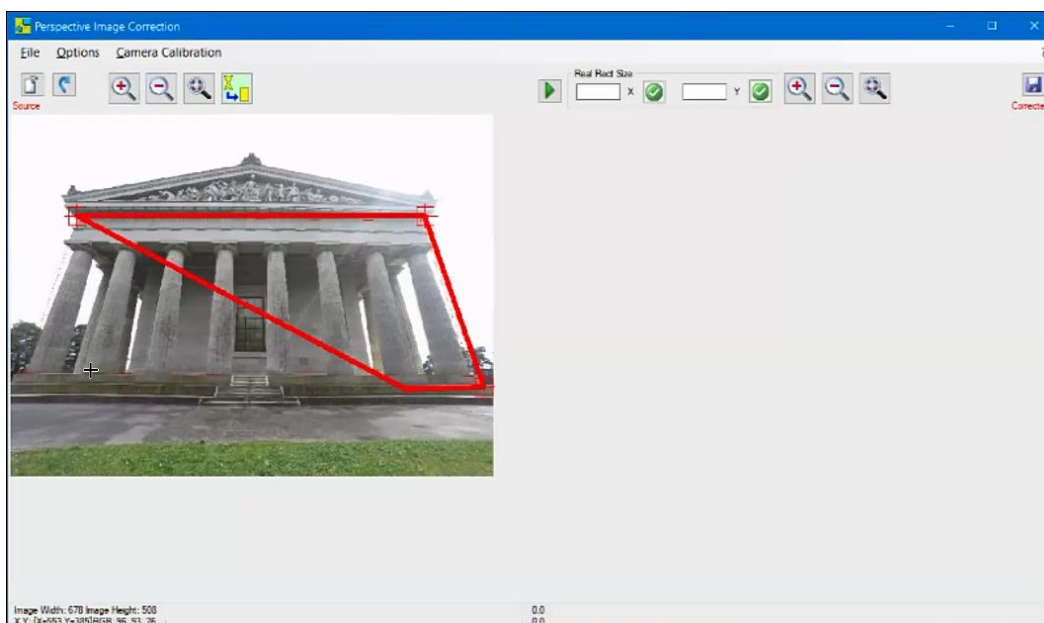
Single Lines of random characters with Discontinuities Removed

This approach hides the password in plain sight while making it quick to retrieve—though Peter acknowledges it relies on a certain level of personal discretion and good file security.

Perspective Image Correction

Often images with verticals such as buildings look unnatural when photographed, as humans perceive the building as it is and the brain sees it. It’s like a clever trick, your brain reads the image and says, “this looks like a building,” and ignores the perspective. When the same building is viewed in as an image the perspective is more apparent.

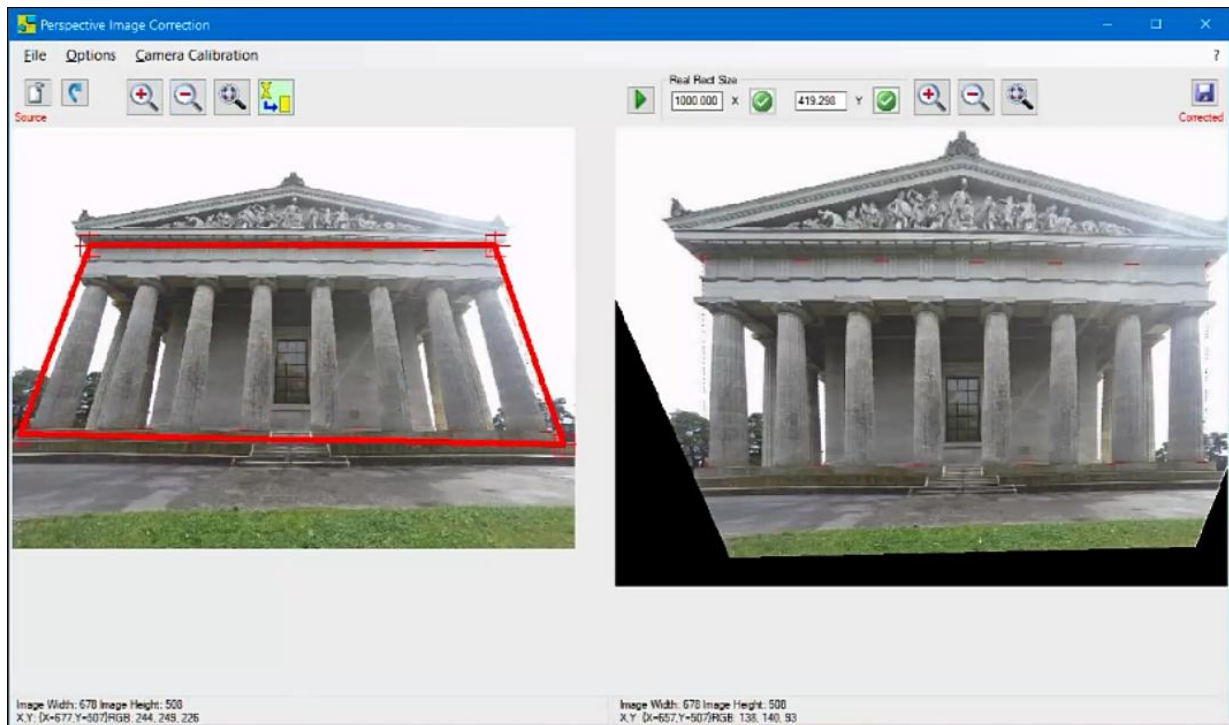
The major photo editing programs such as Photoshop are able to correct for Image Perspective Correction, but for those wanting a free program Peter demonstrated on the image below how the same is achieved in a small and free program called “*Perspective Image Correction*”. The program requires the user to draw a clockwise square over the image that would represent a square in nature or true square on the object.



Perspective Image Correction main window

To correct the perspective, you need to set four points of a polygon and create a rectangular area corresponding to the real-world view. The polygon should be drawn clockwise, starting from the top-left corner.

Peter demonstrated this on a image of a temple with many vertical lines. However, the same program would have another use when photographing documents to remove the perspective error.



Perspective Image Correction corrected image

Reference:

Program: *Perspective Image Correction* version 2.0.0.8

Freeware

URL: <https://www.softpedia.com/get/Multimedia/Graphic/Graphic-Editors/Perspective-Image-Correction.shtml>

How to Download your photos from Google Photos – highlighting the nuisance features of Google Takeout

by Peter Carpenter

Google Takeout is a tool from Google to download photos from your Google Photo library. Google Takeout comes with a number of problems and limitations that Peter alerted to and demonstrated ways around the limitations.

Before demonstrating Google Takeout Peter Carpenter referenced members to an excellent YouTube video titled “**Backup Google Photos with Takeout - Tutorial Video 835**” by Chris Guld from the *Geeks on the Tour* YouTube Channel.

Google Takeout – What It Is and How It Works

Google Takeout is Google’s official tool for downloading a copy (archive) of all your data from Google services, including your **Google Photos library**.

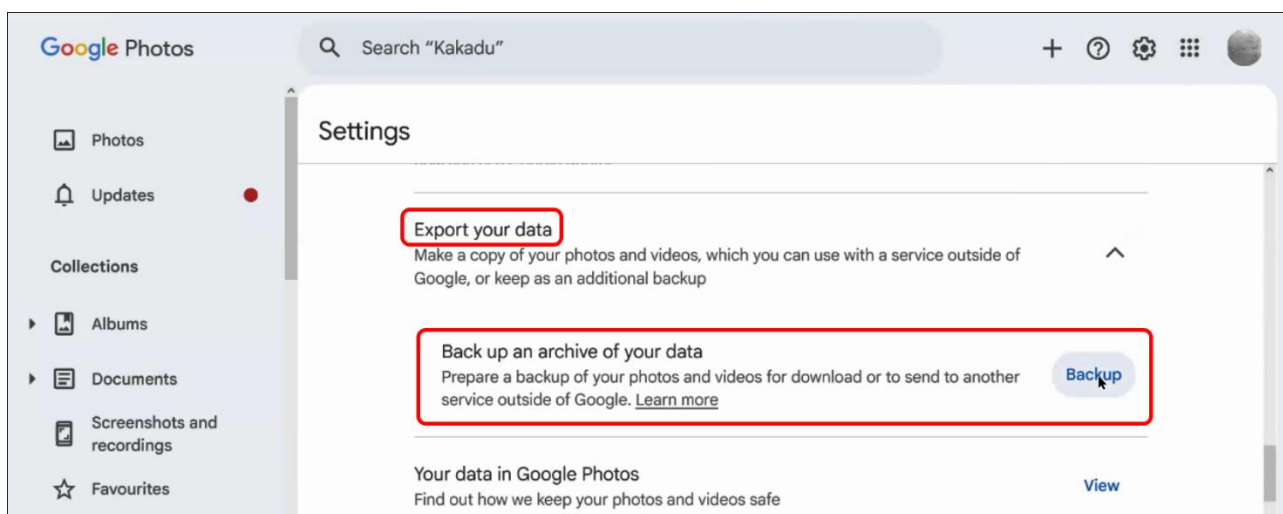
You can find it at <https://takeout.google.com> or from within your **Google Photos settings** → **Export your data**.

When using Google Takeout for Photos:

- It gathers all your pictures and videos and saves them in **ZIP files** that you can download to your computer.
- You can choose to export **all albums** or just specific ones.
- Google will also create extra folders for photos grouped by **year, trash, or conversations**, even if you didn’t create those albums yourself.
- If you have many photos, you may get **multiple ZIP files** (default 2 GB each, but you can choose larger sizes).

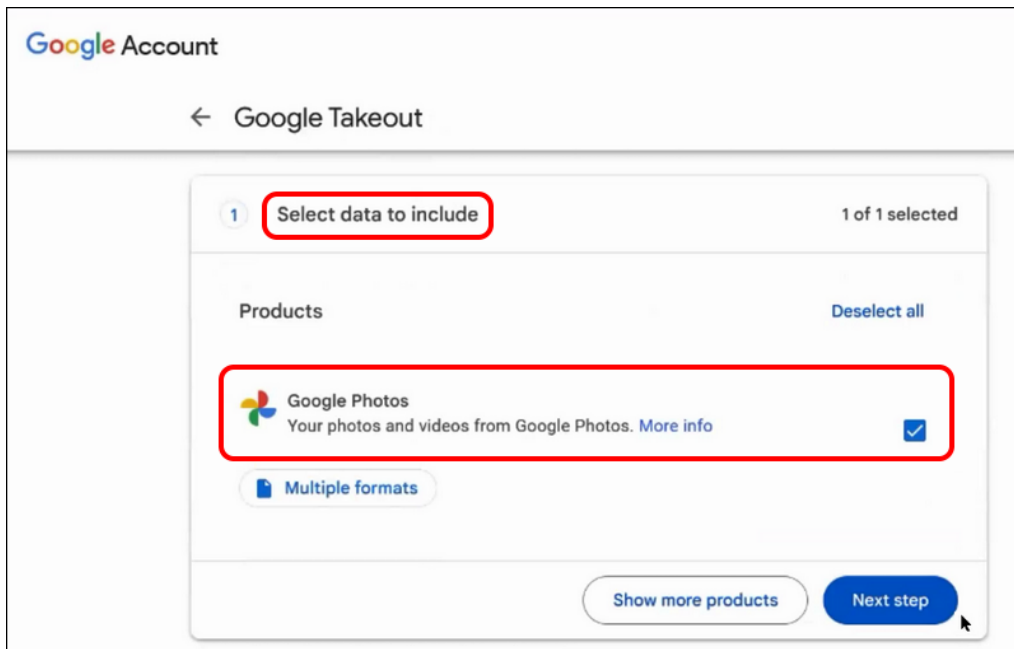
How to Download

1. Go to **takeout.google.com**.



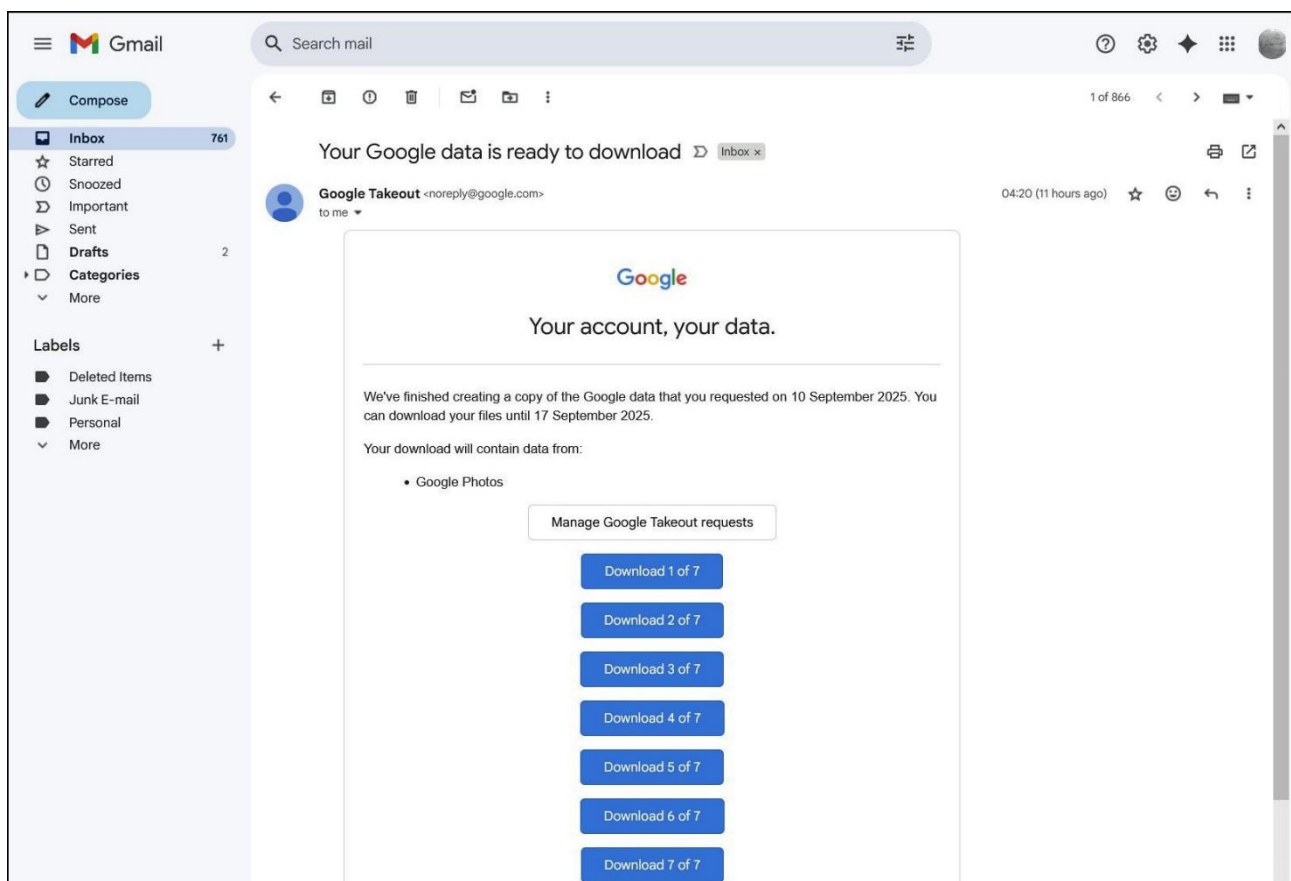
Google Account browser window

2. Choose **Google Photos** only (deselect everything else).
3. Decide whether to include all albums or specific ones.



Google Account, Takeout window

4. Select delivery method — usually **“Send download link via email.”**
5. Google prepares the files (can take hours or days).
6. You’ll get an email with a **Download** link.



Email delivery with download link

7. The downloaded file shown in the email above is a **ZIP**, which Peter then extracted to view the contents.

Name	↑Ext	size	writedate	accessdate	WriteHereDate
takeout-20250910T165828Z-1-001.zip		2,148,149,751	11/09/2025 15:37	11/09/2025 16:57	11-09-2025 15:31:29
takeout-20250910T165828Z-1-002.zip		2,147,867,709	11/09/2025 15:55	11/09/2025 17:01	11-09-2025 15:50:15
takeout-20250910T165828Z-1-003.zip		2,147,822,529	11/09/2025 16:05	11/09/2025 16:05	11-09-2025 15:59:32
takeout-20250910T165828Z-1-004.zip		2,147,816,772	11/09/2025 16:23	11/09/2025 16:23	11-09-2025 16:18:02
takeout-20250910T165828Z-1-005.zip		2,147,774,303	11/09/2025 16:40	11/09/2025 16:40	11-09-2025 16:35:12
takeout-20250910T165828Z-1-006.zip		1,053,273,490	11/09/2025 16:54	11/09/2025 16:54	11-09-2025 16:51:11

Downloaded Takeout Zip files

[Auto] Name	↑Ext	size	writedate	accessdate	WriteHereDate
C_est Us		<DIR>	11/09/2025 02:58		
Canals_23		<DIR>	17/12/2023 18:47		
Photos from 1997		<DIR>	11/09/2025 02:58		
Photos from 2018		<DIR>	11/09/2025 02:58		
Photos from 2019		<DIR>	11/09/2025 02:58		
Photos from 2020		<DIR>	11/09/2025 02:58		
Photos from 2021		<DIR>	11/09/2025 02:59		
Photos from 2022		<DIR>	11/09/2025 02:58		
Photos from 2023		<DIR>	11/09/2025 02:58		
print-subscriptions.json		3	11/09/2025 02:58		
shared_album_comments.json		3	11/09/2025 02:58		
user-generated-memory-titles.json		41	11/09/2025 02:58		

Extracted files from *takeout-20250910T165828Z-1-001.zip* above

[Auto] Name	Ext	size	writedate	accessdate
IMG_20210512_171628.jpg		1,806,703	11/09/2025 04:07	
IMG_20210512_171628.jpg.supplemental-metadata.json		854	11/09/2025 04:07	
IMG_20210512_224221.jpg		860,279	11/09/2025 04:07	
IMG_20210512_224221.jpg.supplemental-metadata.json		838	11/09/2025 04:07	
IMG_20210513_034019.jpg		815,548	11/09/2025 04:06	
IMG_20210513_034019.jpg.supplemental-metadata.json		852	11/09/2025 04:06	
IMG_20210514_200752.jpg		2,802,908	11/09/2025 04:06	
IMG_20210514_200752.jpg.supplemental-metadata.json		868	11/09/2025 04:06	
IMG_20210515_140623.jpg		4,178,495	11/09/2025 04:06	
IMG_20210515_140623.jpg.supplemental-metadata.json		846	11/09/2025 04:06	
IMG_20210515_144231.jpg		2,782,362	11/09/2025 04:06	
IMG_20210515_144231.jpg.supplemental-metadata.json		838	11/09/2025 04:06	
IMG_20210516_080651.jpg		2,349,644	11/09/2025 04:06	
IMG_20210516_080651.jpg.supplemental-metadata.json		668	11/09/2025 04:06	
IMG_20210516_084359.jpg		2,132,817	11/09/2025 04:06	

Figure 1 - Images and their accompanying .json file from takeout folder “Photos from 2021”

Zip file Contents

Inside the extracted folder you’ll see:

- A **Google Photos** folder with subfolders for each album and each year.
- An **HTML summary file** showing what’s in the archive.
- An accompanying **.json file** for each photo. These contain the **metadata** (information such as time the photo was taken) for each photo or album.

The photo files themselves (JPEGs, videos, etc.) are all newly created the day you downloaded them. The image files themselves have modified timestamps (e.g. the date you downloaded them), and lack embedded EXIF metadata such as the creation date or location information. The contents of Peter’s .json file for image “IMG_20210406 175837.jpg” is shown below.

```
IMG_20210406_175837.jpg.supplemental-metadata.json - Universal Viewer
File Edit View Mode Options Help
{
  "title": "IMG_20210406_175837.jpg",
  "description": "",
  "imageViews": "0",
  "creationTime": {
    "timestamp": "1695478660",
    "formatted": "23 Sept 2023, 14:17:40 UTC"
  },
  "photoTakenTime": {
    "timestamp": "1617695918",
    "formatted": "6 Apr 2021, 07:58:38 UTC"
  },
  "geoData": {
    "latitude": -37.905327799999995,
    "longitude": 144.9930167,
    "altitude": 0.0,
    "latitudeSpan": 0.0,
    "longitudeSpan": 0.0
  },
  "geoDataExif": {
    "latitude": -37.905327799999995,
    "longitude": 144.9930167,
    "altitude": 0.0,
    "latitudeSpan": 0.0,
    "longitudeSpan": 0.0
  },
  "url":
  "https://photos.google.com/photo/AF1QipN_JlUL5qBiPbYn2vUp4Yqdm-Nw-U1DmKtjXwSy",
  "googlePhotosOrigin": {
    "mobileUpload": {
      "deviceFolder": {
        "localFolderName": ""
      },
      "deviceType": "ANDROID_PHONE"
    }
  }
}
```

A typical **.json** file from Peter's download

Major Limitations and Problems

1. No Descriptions or Captions

- Any notes, captions, or edited descriptions you added in Google Photos are **not stored in the image itself**.
- They are in a separate **.json file**, which most people can't easily view or use.
- You would need special third-party software (like *Metadata Fixer* or *ExifTool*) to merge that information back into the photos.

2. Duplicates

- Photos that appear in more than one album are downloaded **multiple times** (once per album).
- Edited photos are also downloaded twice — the **original** and the **edited** version.

3. Complicated Folder Structure

- Takeout creates multiple folders (by album, by year, by trash, etc.), which makes it messy to navigate — especially with thousands of photo files.

4. No “Restore” Button

- There’s **no automatic way** to restore your library back to Google Photos.
- To recover photos, you must **manually upload** them again (drag-and-drop into Google Photos).
- JSON files can’t be uploaded — only the image and video files are accepted.

5. Albums Must Be Recreated

- You can drag folders back into Google Photos to recreate albums manually, but it’s tedious for large libraries.

6. Large Libraries Are a Hassle

- If you have tens of thousands of photos, you’ll end up with **many ZIP files, duplicate photos, and missing descriptions** — making the backup hard to manage or restore cleanly.

Solving Google Takeouts Problems & Issues

Restore EXIF meta data to the downloaded Takeout Images

Photos downloaded via **Google Takeout** lack the embedded EXIF metadata found in the original image files. Instead, Google preserves key metadata—such as the date taken, location, camera details, and other attributes—in separate **json** (JavaScript Object Notation) files that accompany each photo.

JSON metadata files are plain text files named similarly to their corresponding images, as illustrated in Figure 1. For example:

IMG_20210407_185612.jpg.supplemental-metadata.json (size: 667 bytes, modified: 11/09/2025 04:09) accompanies the image file *IMG_20210407_185612.jpg* and contains the following information:

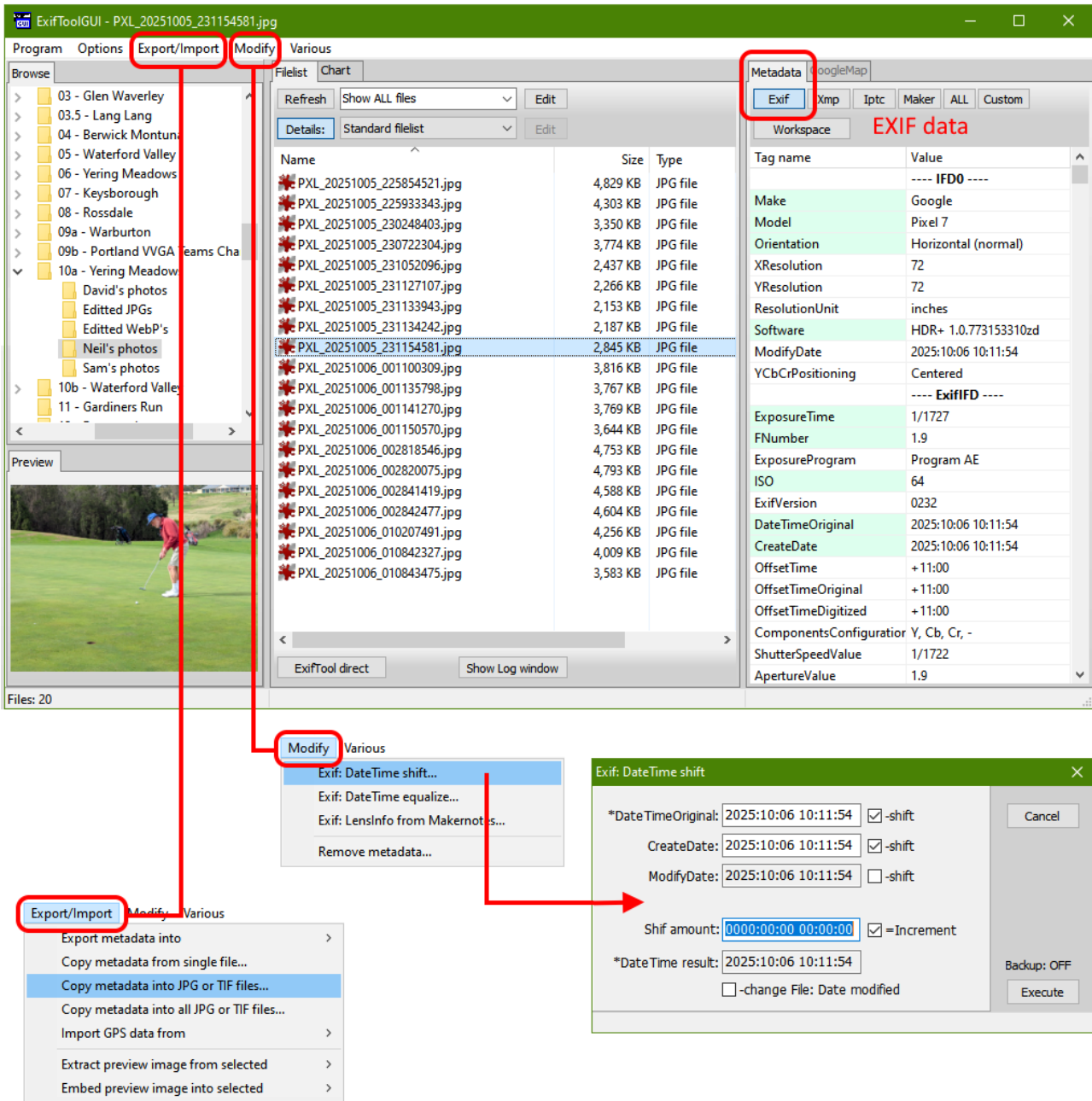
- PhotoTakenTime
- Location info
- Descriptions
- Device details

How to Restore EXIF Metadata

To restore the original "Date Taken" and other EXIF data:

- Use tools like **Metadata Fixer** (US\$39) or the open-source tool ExifToolGUI as a graphical front end for the command line tool **ExifTool**, to amend the Google downloaded date to the date the photo was created.
- Peter demonstrated **ExifToolGUI** explaining how you change the EXIF data to amend the date entry to date taken. The singular problem with this program is it’s a manual process where only one entry can be changed at a time, as EXIFtoolGUI does not read .json files. The following image is included to help to explain the procedure. (At the end of this report, you’ll find step-by-step Copilot instructions for using EXIFtoolGUI and the EXIFtool.exe command-line tool)
- Alternatively, the date can be restored using **Bulk Rename Utility**, which Peter demonstrated, to change the export date shown by Google TakeOut, to the date the photo was taken. Although the program’s main function is to bulk rename files, it offers an additional feature under **Special** on the menu bar for changing dates.

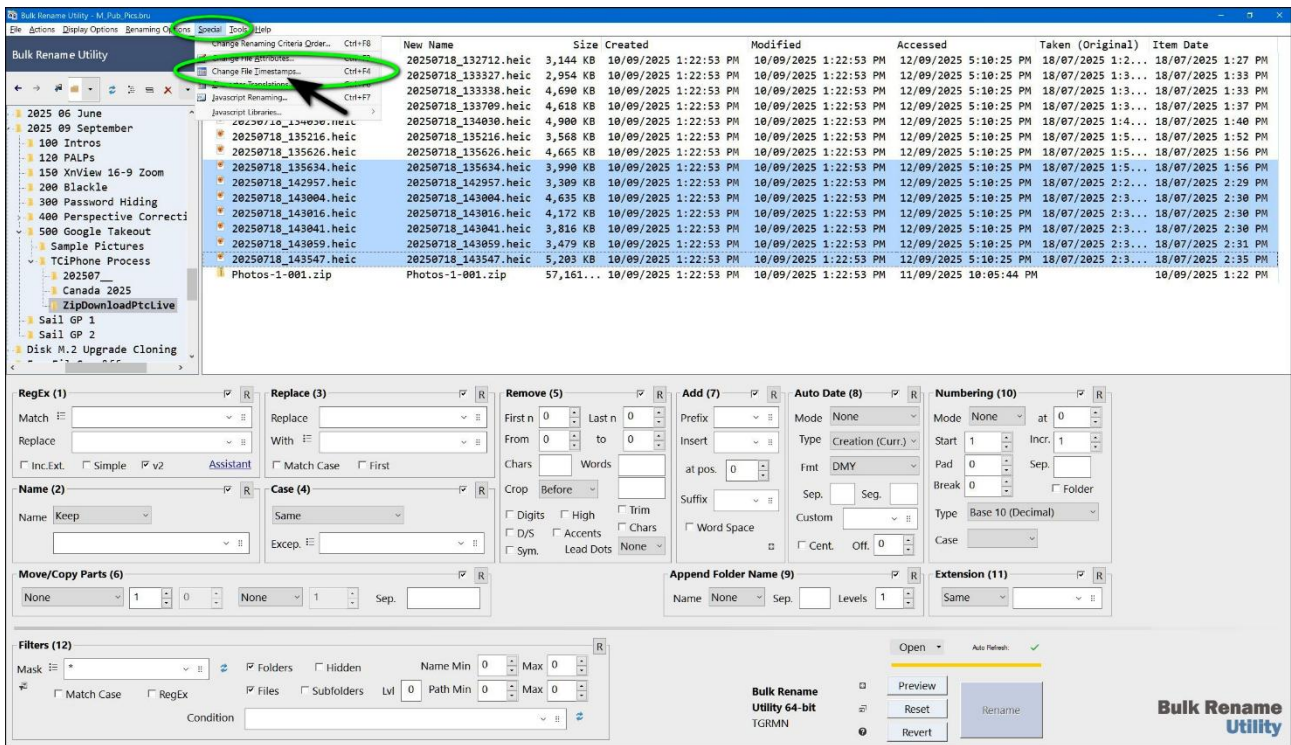
- Both **ExifToolGUI** and **Bulk Rename Utility** can amend the dates in images downloaded via Google Takeout. However, the process is laborious because neither tool can read metadata from the associated .json files. Peter's aim here was to highlight the disadvantages of Google Takeout, specifically the effort required to restore photos to their original, pre-download state.



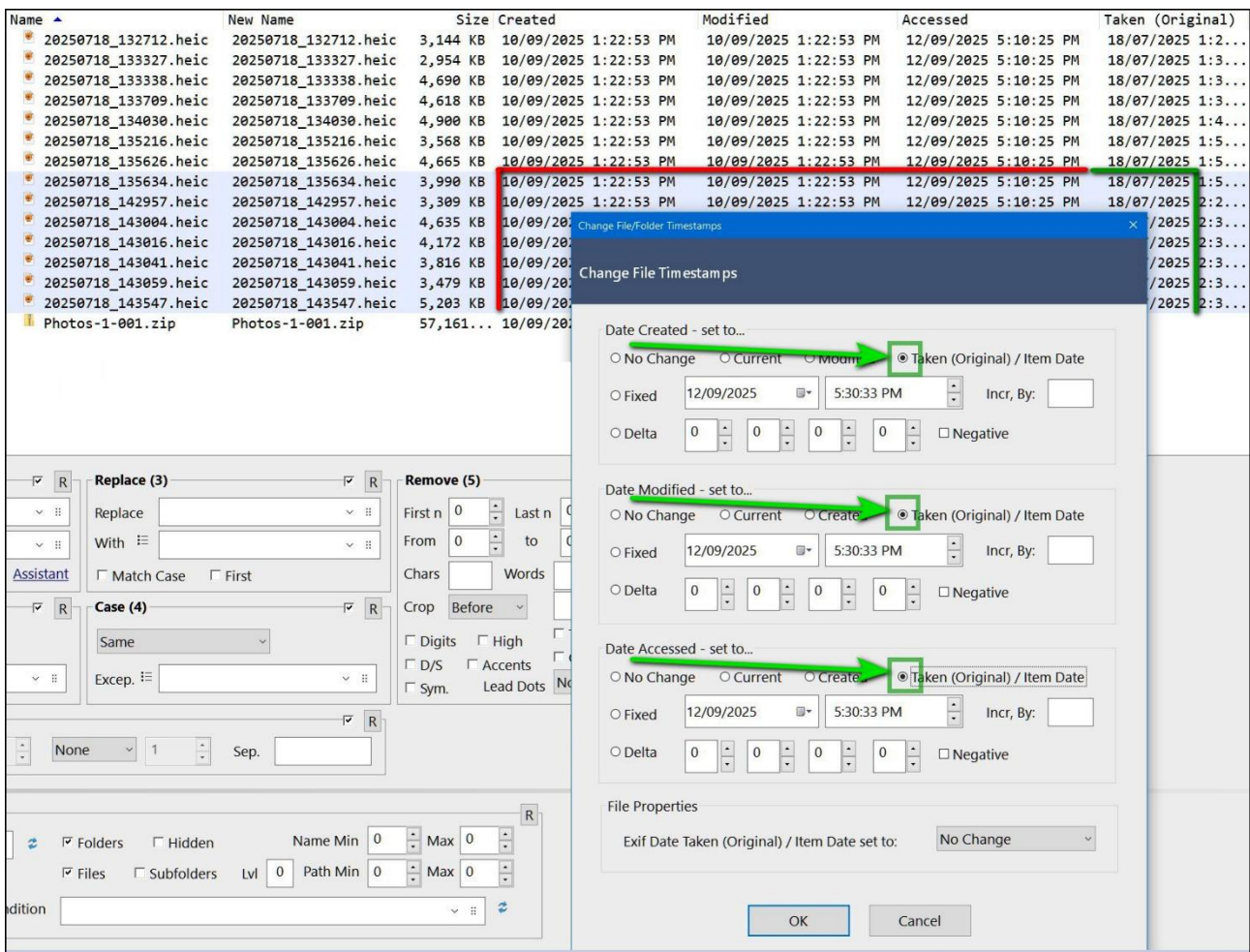
EXIFtoolGUI Export/Import & Modify menus

Bulk Rename Utility instructions

The following graphics were provided by Peter for this report. They demonstrate how **Bulk Rename Utility** can change in bulk, the date the image was downloaded from Google Takeout to the common date the image was taken.



Bulk Rename Utility main window with **Special** menu open, highlighting the **Change File Timestamps** option.



Change File Timestamps window

Name	New Name	Size	Created	Modified	Accessed	Taken (Original)	Item Date
20250718_132712.heic	20250718_132712.heic	3,144 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:2...	18/07/2025 1:27 PM
20250718_133327.heic	20250718_133327.heic	2,954 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:3...	18/07/2025 1:33 PM
20250718_133338.heic	20250718_133338.heic	4,690 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:3...	18/07/2025 1:33 PM
20250718_133709.heic	20250718_133709.heic	4,618 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:3...	18/07/2025 1:37 PM
20250718_134030.heic	20250718_134030.heic	4,900 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:4...	18/07/2025 1:40 PM
20250718_135216.heic	20250718_135216.heic	3,568 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:5...	18/07/2025 1:52 PM
20250718_135626.heic	20250718_135626.heic	4,665 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:5...	18/07/2025 1:56 PM
20250718_135634.heic	20250718_135634.heic	3,990 KB	18/07/2025 1:56:35 PM	18/07/2025 1:56:35 PM	18/07/2025 1:56:35 PM	18/07/2025 1:5...	18/07/2025 1:56 PM
20250718_142957.heic	20250718_142957.heic	3,309 KB	18/07/2025 2:29:57 PM	18/07/2025 2:29:57 PM	18/07/2025 2:29:57 PM	18/07/2025 2:2...	18/07/2025 2:29 PM
20250718_143004.heic	20250718_143004.heic	4,635 KB	18/07/2025 2:30:04 PM	18/07/2025 2:30:04 PM	18/07/2025 2:30:04 PM	18/07/2025 2:3...	18/07/2025 2:30 PM
20250718_143016.heic	20250718_143016.heic	4,172 KB	18/07/2025 2:30:16 PM	18/07/2025 2:30:16 PM	18/07/2025 2:30:16 PM	18/07/2025 2:3...	18/07/2025 2:30 PM
20250718_143041.heic	20250718_143041.heic	3,816 KB	18/07/2025 2:30:41 PM	18/07/2025 2:30:41 PM	18/07/2025 2:30:41 PM	18/07/2025 2:3...	18/07/2025 2:30 PM
20250718_143059.heic	20250718_143059.heic	3,479 KB	18/07/2025 2:31:00 PM	18/07/2025 2:31:00 PM	18/07/2025 2:31:00 PM	18/07/2025 2:3...	18/07/2025 2:31 PM
20250718_143547.heic	20250718_143547.heic	5,203 KB	18/07/2025 2:35:47 PM	18/07/2025 2:35:47 PM	18/07/2025 2:35:47 PM	18/07/2025 2:3...	18/07/2025 2:35 PM
Photos-1-001.zip	Photos-1-001.zip	57,161...	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	11/09/2025 10:05:44 PM		10/09/2025 1:22 PM

The original Exif date has now been transferred to each of the standard file dates!

The original Exif date has now been transferred to each of the standard file dates!

Name	New Name	Size	Created	Modified	Accessed	Taken (Original)	Item Date
20250718_132712.heic	20250718_132712.heic	3,144 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:2...	18/07/2025 1:27 PM
20250718_133327.heic	20250718_133327.heic	2,954 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:3...	18/07/2025 1:33 PM
20250718_133338.heic	20250718_133338.heic	4,690 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:3...	18/07/2025 1:33 PM
20250718_133709.heic	20250718_133709.heic	4,618 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:3...	18/07/2025 1:37 PM
20250718_134030.heic	20250718_134030.heic	4,900 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:4...	18/07/2025 1:40 PM
20250718_135216.heic	20250718_135216.heic	3,568 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:5...	18/07/2025 1:52 PM
20250718_135626.heic	20250718_135626.heic	4,665 KB	10/09/2025 1:22:53 PM	10/09/2025 1:22:53 PM	12/09/2025 5:10:25 PM	18/07/2025 1:5...	18/07/2025 1:56 PM
20250718_135634.heic	20250718_135634.heic	3,990 KB	18/07/2025 1:56:35 PM	18/07/2025 1:56:35 PM	18/07/2025 1:56:35 PM	18/07/2025 1:5...	18/07/2025 1:56 PM
20250718_142957.heic	20250718_142957.heic	3,309 KB	18/07/2025 2:29:57 PM	18/07/2025 2:29:57 PM	18/07/2025 2:29:57 PM	18/07/2025 2:2...	18/07/2025 2:29 PM
20250718_143004.heic	20250718_143004.heic	4,635 KB	18/07/2025 2:30:04 PM	18/07/2025 2:30:04 PM	18/07/2025 2:30:04 PM	18/07/2025 2:3...	18/07/2025 2:30 PM
20250718_143016.heic	20250718_143016.heic	4,172 KB	18/07/2025 2:30:16 PM	18/07/2025 2:30:16 PM	18/07/2025 2:30:16 PM	18/07/2025 2:3...	18/07/2025 2:30 PM
20250718_143041.heic	20250718_143041.heic	3,816 KB	18/07/2025 2:30:41 PM	18/07/2025 2:30:41 PM	18/07/2025 2:30:41 PM	18/07/2025 2:3...	18/07/2025 2:30 PM
20250718_143059.heic	20250718_143059.heic	3,479 KB	18/07/2025 2:31:00 PM	18/07/2025 2:31:00 PM	18/07/2025 2:31:00 PM	18/07/2025 2:3...	18/07/2025 2:31 PM
20250718_143547.heic	20250718_143547.heic	5,203 KB	18/07/2025 2:35:47 PM	18/07/2025 2:35:47 PM	18/07/2025 2:35:47 PM	18/07/2025 2:3...	18/07/2025 2:35 PM
Photos-1-001.zip	Photo				12/09/2025 10:05:44 PM		10/09/2025 1:22 PM

7 files and/or folders are about to be processed.

You have also chosen to update created dates, modified dates, last accessed dates.

Please double-check that the files and/or folders you have selected are correct, and that the new filenames are as you intended.

This is your last opportunity to cancel!

Confirm Each Renaming Individually

Show This Warning Again

OK Cancel Preview

Last chance to check that the green dates are okay.

Last chance to check that the green dates are okay.

Name	Type	Size	Date modified	Date accessed	Date created	Date taken
20250718_132712.heic	HEIC Image file	3,145 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:27 PM
20250718_133327.heic	HEIC Image file	2,955 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:33 PM
20250718_133338.heic	HEIC Image file	4,691 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:33 PM
20250718_133709.heic	HEIC Image file	4,619 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:37 PM
20250718_134030.heic	HEIC Image file	4,901 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:40 PM
20250718_135216.heic	HEIC Image file	3,569 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:52 PM
20250718_135626.heic	HEIC Image file	4,666 KB	10/09/2025 1:22 PM	12/09/2025 5:10 PM	10/09/2025 1:22 PM	18/07/2025 1:56 PM
20250718_135634.heic	HEIC Image file	3,991 KB	18/07/2025 1:56 PM	12/09/2025 5:49 PM	18/07/2025 1:56 PM	18/07/2025 1:56 PM
20250718_142957.heic	HEIC Image file	3,310 KB	18/07/2025 2:29 PM	12/09/2025 5:49 PM	18/07/2025 2:29 PM	18/07/2025 2:29 PM
20250718_143004.heic	HEIC Image file	4,636 KB	18/07/2025 2:30 PM	12/09/2025 5:49 PM	18/07/2025 2:30 PM	18/07/2025 2:30 PM
20250718_143016.heic	HEIC Image file	4,173 KB	18/07/2025 2:30 PM	12/09/2025 5:49 PM	18/07/2025 2:30 PM	18/07/2025 2:30 PM
20250718_143041.heic	HEIC Image file	3,817 KB	18/07/2025 2:30 PM	12/09/2025 5:49 PM	18/07/2025 2:30 PM	18/07/2025 2:30 PM
20250718_143059.heic	HEIC Image file	3,480 KB	18/07/2025 2:31 PM	12/09/2025 5:49 PM	18/07/2025 2:31 PM	18/07/2025 2:31 PM
20250718_143547.heic	HEIC Image file	5,204 KB	18/07/2025 2:35 PM	12/09/2025 5:49 PM	18/07/2025 2:35 PM	18/07/2025 2:35 PM
Photos-1-001.zip	Compressed (zipped) Folder	57,162 KB	10/09/2025 1:22 PM	12/09/2025 5:14 PM	10/09/2025 1:22 PM	

Each file's common dates in the sample set all aligned with 'Date taken' for ease of readability. ('Date accessed' changes every time you look at it.)

Summary

Google Takeout lets you download everything from Google Photos, but:

- It's best viewed as a **backup**, not a practical restore tool.
- **Metadata, captions, and edits are separate** and hard to recover.
- **Duplicates and cluttered folders** make the archive confusing.
- **No automatic restore** — everything must be re-uploaded manually.

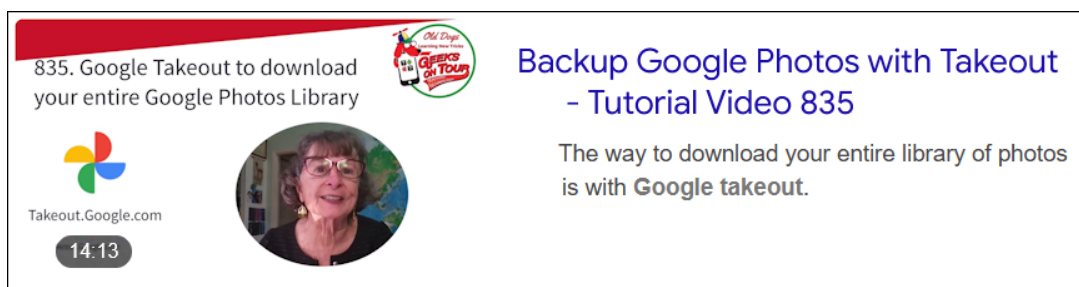
Google Takeout works fine for small libraries, but if you have thousands of photos, expect it to be slow, messy, and incomplete when trying to rebuild your Google Photos library.

Reference:

YouTube channel: Geeks On Tour

Video title: Backup Google Photos with Takeout - Tutorial Video 835

URL: https://www.youtube.com/watch?v=ec_4FZEKH2Q



“Geeks On Tour” YouTube banner

User Instructions for Programs demonstrated

Using ExifToolGUI to restore “Date Taken”

What You'll Need

- ExifToolGUI: A free graphical front-end for ExifTool
- ExifTool.exe: The core engine (must be installed separately)
- Your Google Takeout folder with .jpg and .json files

Step 1: Install ExifToolGUI

1. Download ExifToolGUI from <https://exiftool.org/gui/>
2. Extract the contents to a folder (e.g., C:\ExifToolGUI)
3. Download exiftool.exe from exiftool.org
4. Place exiftool.exe in the same folder as ExifToolGUI

Step 2: Prepare Your Files

- Ensure each photo (e.g., IMG_1234.jpg) has a matching .json file (IMG_1234.jpg.json)
- Place all files in one folder for easy access

Step 3: Launch ExifToolGUI

- Run ExifToolGUI.exe
- Navigate to your photo folder using the left-hand folder tree

Step 4: View and Edit Metadata

1. Select a photo (e.g., IMG_1234.jpg)
 2. Click the **Exif** tab to view current metadata
 3. If the EXIF DateTimeOriginal is missing, you'll need to manually add it using the JSON data
-

How to Add "Date Taken" from JSON

Unfortunately, ExifToolGUI **does not automatically read JSON files**. You'll need to:

1. Open the .json file in a text editor (e.g., Notepad)
2. Find the "photoTakenTime" field:

```
"photoTakenTime": {  
  "timestamp": "1588346400",  
  "formatted": "2020-05-01T12:00:00Z"  
}
```

3. Copy the formatted value (e.g., 2020:05:01 12:00:00)
4. In ExifToolGUI:
 - Click the **Modify** tab
 - Choose **Add New Tag**
 - Select DateTimeOriginal
 - Paste the formatted date (use YYYY:MM:DD HH:MM:SS format)
 - Click **Save**

Repeat for each photo, or use batch mode if you've manually prepared a CSV or tag file.

✅ **Optional: Sync File System Timestamps**

Once EXIF is restored:

- Use **BulkFileChanger** to update Windows file timestamps (Created/Modified) from EXIF
 - Or use ExifToolGUI's **"Copy EXIF to File Date"** feature:
 - Select files
 - Click **Specials → Copy EXIF Date to File Modified Date**
-

🌱 **Tip for Batch Automation**

If you have many files, consider using the command-line **ExifTool.exe** with a script to automate JSON-to-EXIF conversion as ExifToolGUI is best for small batches or manual control.

Result

Your photos will now:

- Contain correct EXIF metadata
- Show the right "Date Taken" in Windows
- Be sortable by date in photo apps

Batch Script: Restore EXIF from Google Takeout JSON

```
@echo off
REM === Set path to ExifTool.exe if not in system PATH ===
set EXIFTOOL=ExifTool.exe

REM === Change to the directory where your photos and JSON files are ===
cd /d "C:\Path\To\Your\Takeout\Photos"

REM === Loop through all JSON files ===
for %%F in (*.json) do (
    REM Get base filename without extension
    set "JSON=%%~nF"
    call :process "%%F" "%%~nF"
)

goto :eof

:process
REM === Match JSON to corresponding image file ===
REM You can adjust extensions if needed (e.g., .jpg, .png, .heic)
for %%I in ("%~2.jpg" "%~2.JPG" "%~2.png" "%~2.heic") do (
    if exist "%~1" (
        echo Updating metadata for %%I using %%~1
        %EXIFTOOL% -overwrite_original -tagsFromFile "%~1" -all:all "%~1"
    )
)
)
```

What This Script Does

- Loops through all .json files in the folder.
- Matches each .json to its corresponding image file (same base name).
- Uses ExifTool.exe to copy all metadata (-all:all) from the .json into the image.
- Overwrites the original image file with updated metadata (-overwrite_original).

Before You Run It

1. **Backup your photos** — just in case.
2. Place ExifTool.exe in the same folder or add it to your system PATH.
3. Adjust the script's folder path (cd /d) to match your photo directory.
4. If your images use different extensions (e.g., .jpeg, .webp), add them to the for %%I in (...) line.

Neil Muller