East SIG Report – April 2024

After welcoming members to the April meeting of East SIG, host Frank Maher outlined the nights agenda below:

Presentation 1: **Q&A** with George Skarbek
Presentation 2: **Proposed Windows 11 24H2 update** by Frank Maher
Presentation 3: **Noise Cancelling Headphones** by George Skarbek
Presentation 4: **Assorted Computer Related Items** by Peter Carpenter
Presentation 5: **Championship Racing Drones & AI** by Peter Carpenter
Presentation 6: **Shutter Encoder** by Peter Carpenter
Presentation 7: **Lossless Cut** by Peter Carpenter

<u>Q&A</u> by George Skarbek.

Question 1: I'd like to save my Outlook emails, both files and folders, onto a USB drive. How do I do it?

Answer 1: Depending on the mail protocol used, there is a .pst file or .ost file you need to save. The folder location can vary, but usually there are 2 locations the file could be. These are:
C:/Users/(Your name)/Documents/Outlookfiles or
C:/Users/(Your name)/AppData/Local/Microsoft/Outlook.
The file could be very large, possibly many Gigabytes, if you've been using Outlook for a while.

Question 2: I manage a website for my local Rotary Club on Yola.com and I'd like to save all the information on the website to my laptop. I thought the website would object to releasing all the information so can you tell me how I can save my data?

Answer 2: It's your information and you're entitled to have it. There's free software called HtTrack that can save the whole website from its URL and copy everything underneath. HtTrack can be downloaded at https://www.httrack.com/page/2/
If you have access to cPanel, it has 100's of utilities that can do all sorts of things, one of which can export your website to your hard drive.

[John Hall] As you're managing the website, quite often you'll find the website software will have an export function. I'd do a Google search for exporting from yola. If the site has a lot of subdirectories, HtTrack will do its best to find all the subdirectories but sometimes will miss some of those.

[Peter Carpenter] If HtTrack does not prove satisfactory, another free website copying program worth trying is Cyotek WebCopy at https://www.cyotek.com/cyotek-webcopy

Figure 1 – Website copiers HTTrack and Cyotek

Proposed Windows 11 24H2 update by Frank Maher

The following topic, "Proposed Windows 24H2 update" was presented by Frank Maher and outlines the top features and changes expected with Windows 11 version 24 H2. This update is expected to arrive in the latter half of 2024. Details of the new features are from a YouTube video site PureInfoTech titled "Windows 11 24H2: Best NEW features coming in 2024". The information contained in the video is based on changes already available via the Windows Insider program. The video can be viewed at https://www.youtube.com/watch?v=INS1NQ1ItPU
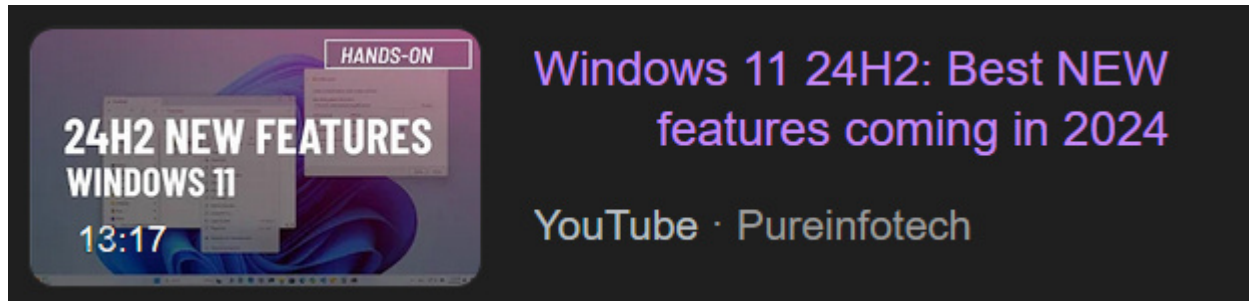

Figure – YouTube banner, Windows 11 24H2: Best new features coming in 2024.

Redesign Install UI
The first new feature you'll notice is the revamped Windows setup experience, which introduces a cleaner and more modern interface for fresh installations or upgrades using USB media. While the overall visual elements remain similar, there are subtle enhancements to the user interface.

New Sudo command
Microsoft is also integrating the Sudo command into Windows 11, a feature commonly found in Unix-based systems since the 1980's. This command allows users to run elevated programs without needing administrator privileges, enhancing user flexibility.

New Energy Saving feature
A new energy saver mode is being introduced to extend battery life on mobile devices and reduce energy consumption on desktops.

New archive compression wizard
File Explorer is receiving a compression wizard, simplifying the process of compressing files with various formats.

Right Click File Context Menu
A small but welcome change to the file context menu is that the top icons options for Cut, Copy Paste etc now have been given labels.

QR code to join Wi-Fi networks
The update will make it easier to share and connect other people or devices to the same Wi-Fi network using a QR barcode.

Printer protected mode, rename & pause
When you go to the properties for a certain printer, under "Additional printer setting" there are options to Rename your printer & Pause.

Support for Bluetooth Low Energy audio devices
For users with hearing aids, Windows 11 now supports Bluetooth Low Energy audio devices, enabling seamless connectivity and control of audio streaming and calls.

Redesign Widgets UI
Widgets are receiving an update, featuring a new navigation rail to switch between news and widgets, enhancing user experience and accessibility.

Eliminating reboots for security updates
Finally, Microsoft is implementing hot patching for Windows updates, eliminating the need for system reboots during the installation of security updates. This mechanism patches running code in memory, ensuring higher availability and reducing disruptions.

Overall, these updates bring significant enhancements to the Windows 11 user experience, focusing on improved functionality, accessibility, and efficiency.

Noise Cancelling Headphones by George Skarbek

What are noise cancelling headphones?
Noise-cancelling headphones are a special type of headphones which suppress unwanted ambient sounds using active noise control. This is distinct from passive headphones which, if they reduce ambient sounds at all, use techniques such as soundproofing.

To cancel the lower-frequency portions of the noise, noise cancelling headphones use active noise control. A microphone captures the targeted ambient sounds, and a small amplifier generates sound waves that are exactly out of phase with the undesired sounds. When the sound pressure of the noise wave is high, the cancelling wave is low (and vice versa). The opposite sound waves collide and are eliminated or "cancelled" (destructive interference).

How Good are noise cancelling headphones?
- Noise-cancelling headphones can be very effective. You can have almost total silence with better models.
- They are essential in some fields such as aviation, as radio communication would be impossible without noise cancelling. This is due to the very high background noise owing to a planes lack of a muffler.
- Noise-cancellation headphones have been used as sleeping aids as well. Both passive isolating and active noise-cancellation headphones or earplugs, help to achieve a reduction of ambient sounds. This makes them particularly helpful for people suffering from insomnia or other sleeping disorders, for whom sounds such as cars honking and snoring impact their ability to sleep.

Home Use
George purchased 3 headphones for comparison purposes. The first a cheap $29 headphone, which was not noise cancelling, but purchased to confirm the Bluetooth connection worked. The second headphone costing $80 was according to George "okay, but not great" and the third $400 Bose model 700 headphones.
- George uses his Bose headphones for listening to TV when someone else is in the room reading or talking on the phone.
- When pairing headphones with the TV or VCR, automatically mutes their speakers.
- Headphones can also be paired with your phone for listening to music or phone calls.

Figure 3 – Choice review, Bose 700 Headphones

Which ones to select
- George strongly recommends that once you have determined your price range, then read the reviews to select your purchase.
- Also, he suggests that you try them for comfort and sound quality and their noise-cancelling ability. To check for comfort leave them on for 5 or more minutes. This is a critical purchase criterion.
- Shops such as JB-Hi-Fi have a range of headphones that you can try before buying.
- All have rechargeable batteries, but the battery life varies between brands and models.

The difference between on-ear and over-ear headphones
- On-ear headphones look slightly different to the over-ear variety, but they don't completely surround your ears. Instead, they rest on the outside of your ears, allowing more airflow around them.
- This generally makes on-ear headphones smaller and therefore easier to store and transport, but they don't block as much ambient noise. They also press on your ears, so poorly made models can become uncomfortable quite quickly.

Headphones to avoid
- Choice magazine's experts tested more than 60 headphones "from popular brands including Sennheiser, Sony, Apple, Bose and more.
- They assessed key factors such as sound quality, noise-cancelling, listening comfort, durability, battery life and more.
- Poor-quality headphones can make even Led Zeppelin sound more like your kid brother's garage band, according to Choice.
- Whether you're enjoying your carefully curated playlists, catching up on podcasts or watching YouTube videos on the go, a decent pair of headphones can be a lifesaver. But if you pick a poor pair, you can say goodbye to the sound of silence - and they can even affect the quality of the audio you're listening to.

Go by reviews, not the price
- Choice reviews show some $500 headphones rate worse than cheaper pairs half their price - sometimes from the very same brand. Paying more doesn't guarantee a better-quality product, so it pays to shop carefully.
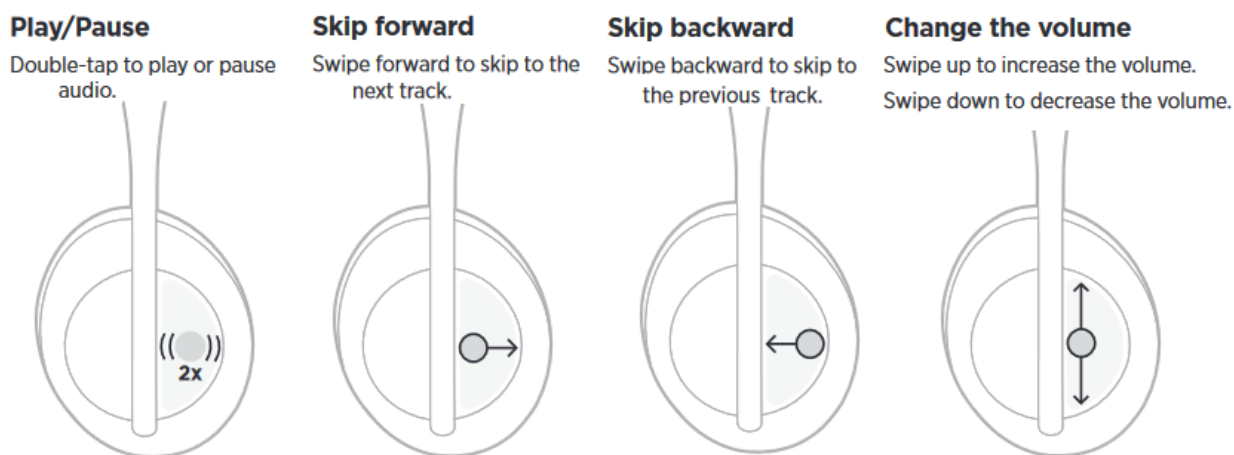
Features

George noted that the features listed below are available on most of the top ten brands recommended by Choice.

- Comfortable, even when wearing glasses
- Long battery life
- Provision for a cable connection
- Control via a touch surface on the right earcup, such as that shown in Figures 3
- Ability to adjust the noise cancelling levels from nil to full. The Bose 700's has 9 or 10 noise cancelling levels.
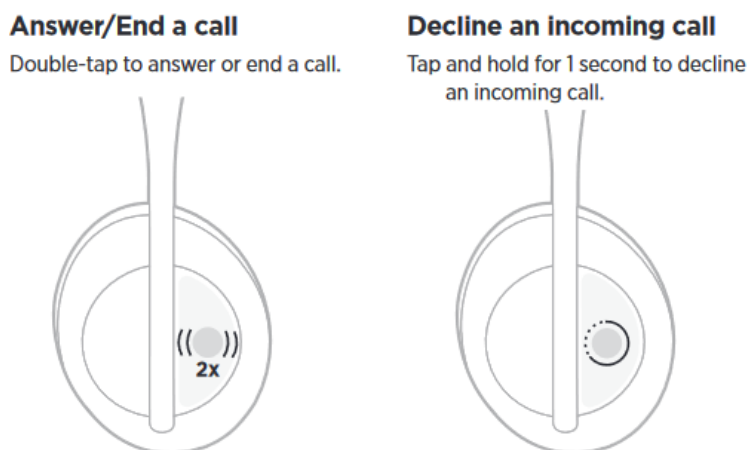
Figure 4 – Bose 700 touch control functions
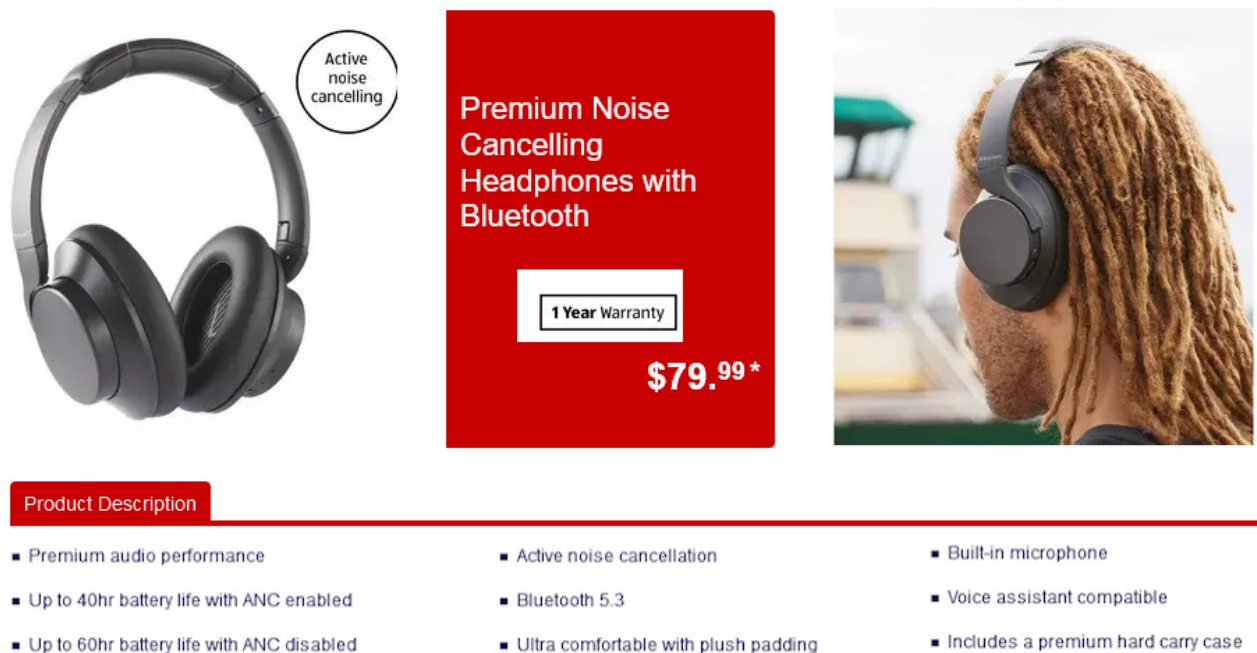
George rounded off his presentation showcasing different headphones reviewed by Choice, which reinforced his earlier comment, "Don't buy a $500 headphone thinking it will be a lot better than a $300 one, it may not."

Assorted Computer related items by Peter Carpenter

Before commencing his main presentations, Peter began with a series of small topics that he believed would be of interest to his audience.

Aldi Noise-cancelling headphones
After George Skarbek's insightful presentation on noise-cancelling headphones, Peter informed members about active noise-cancelling Bluetooth headphones available for sale at Aldi for $79.99, starting from April 20th. Peter reminded members that as always, Aldi has a 60-day return policy available if not satisfied.

Figure 6 – Aldi Active Noise Cancelling Headphones

Spinrite Version 6.1

Cybersecurity expert Steve Gibson, the developer of Spinrite, joins Leo Laporte every Tuesday for a podcast called "Security Now". The podcast breaks down the latest cybercrime and hacking stories, offering an understanding of what's happening and how to protect yourself and your business.

Figure 5 – Security Now podcast

Speaking on his latest podcast (circa 8th April), Steve Gibson announced that Spinrite version 6.1 disk revival software is now on sale. Version 6 was released 20 years ago and Steve has been working on the latest version since that time. An update to version 6 was essential due to more recent developments in technology such as the EUFI Bios, the huge discs now available and particularly SSD drives, which don't lend themselves to constant rewrites, that version 6 used to recover data on hard disc drives.

It's commercial software costing US$89, but an essential tool for recovering from drive failures. Spinrite 6.1 is available from https://www.grc.com, with Peter intending to buy a copy, claiming it to be a lifetime investment.

Figure 6 – Spinrite 6.1 logo

Spinrite not only repairs SSDs, but also improves their performance. In his latest podcast Steve recounted the story of his wife's laptop which had an SSD drive and was very slow to load programs. When the new version of Spinrite was run on the laptop's SSD, performance improved markedly. Spinrite found that the voltages in the SSD's multi-level cells had lost voltage. The action of running Spinrite returned the cells to their former voltage and the performance of his wife's laptop back to its as new state.

Sugru Glue

Sugru is a glue that reacts at room temperature simply on exposure to air and will flex with the materials it's applied to, so you can repair things that need to bend. It sets into a strong, flexible, tactile silicone rubber that stays strong and soft.

The Sugru website https://sugru.com/what-is-sugru claims "Sugru is the best glue for tool-free, everyday fixing, including like-new invisible repairs, and making improvements around the home, indoors and out. It's also excellent for craft projects involving kids."

Figure 8 – Sugru advertisement

Peter has not been able to find any retailers selling Sugru in Australia, but Sugru was found on Amazon for $31.

An alternative to Sugru and available at stores like Bunnings for $8.65, is Loctite's Kintsuglue. Loctite claims "Kintsuglue is a flexible putty, created to repair, reconstruct, protect and enhance almost all objects, even flexible ones". It is available in 2 colours, white as shown in Figure 9 and black.

Both Sugru and Kintsuglue lend themselves to the repair of computer cables as detailed in both advertisements shown in Figures 8 and 9.

Repairs to computer cables is a use Peter thinks would be of interest to members and is the reason for alerting members to this new type of glue.

Figure 9 – Kintsuglue packaging

1973's Ethernet visualization (50th Anniversary)

Bob Metcalf was a researcher at Xerox PARC (Palo Alto Research Centre) and co-inventor of the packet switching system that became the Ethernet. The image displayed in Figure 10 is a recreation image of Bob Metcalf's napkin sketch visualization of the Ethernet's physical layer conception from 1973. What followed the development of Ethernet contributed to the growth of the internet in the 1970's.
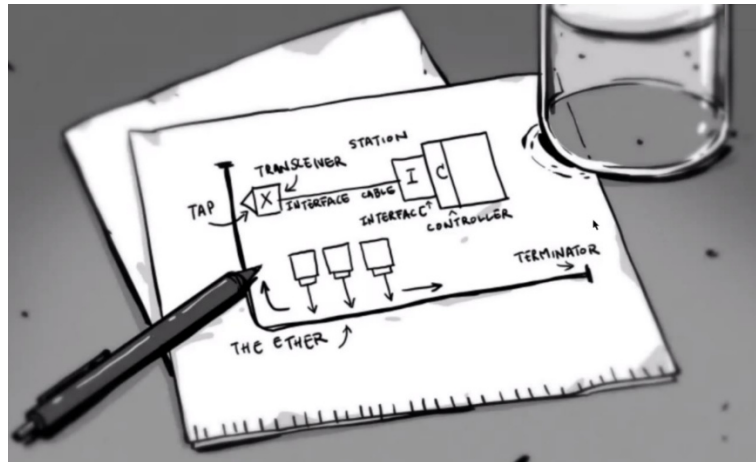

Figure 10 - Bob Metcalf's Ethernet visualization

Direct Folders

Peter believes "Direct Folders" may be a welcome alternative to the Quick Access list in File Explorer, as it offers a convenient popup on the screen to quickly navigate to commonly used folders.

By double clicking on an empty area located on the Desktop, File Explorer or File Open/Save dialog box, brings up a menu. Select a favourite or recent folder from this menu and the file dialog immediately jumps to that folder. If you activate this menu from the desktop or tray icon, this folder will be opened in Windows Explorer.
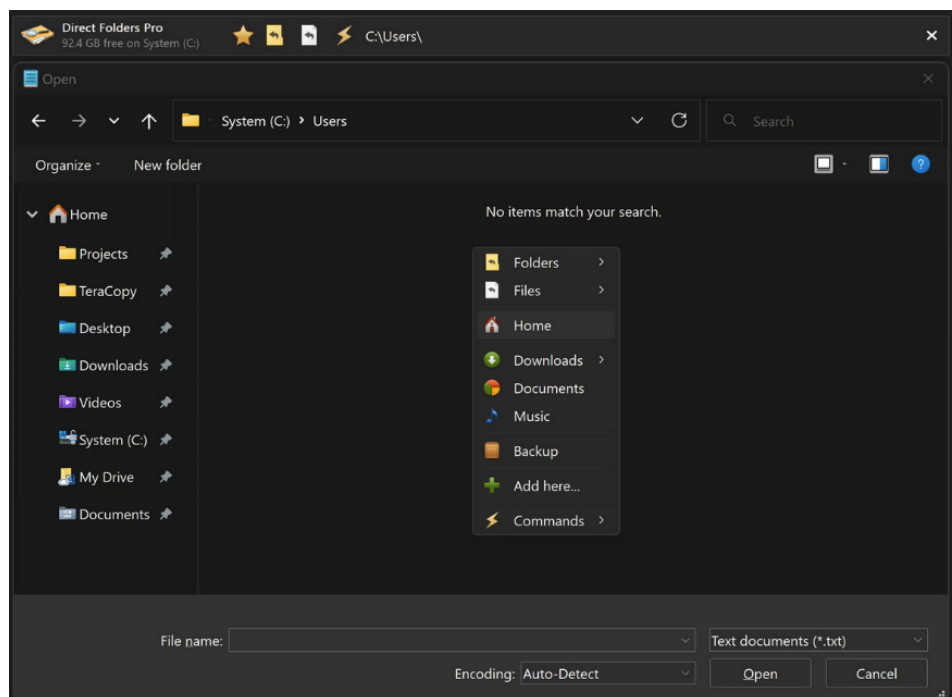

Figure 11 – Direct Folders

The "Direct Folders" website (https://www.codesector.com/directfolders) notes users can jump to any deeply nested folder in just a single mouse click. It also automatically resizes every standard file dialog, so that you can see a larger number of files. The website claims you will be able to find what you are looking for with a lot less scrolling.

News of future developments will be advised in a future presentation as Peter feels the software is not as stable as he would like.

Championship Racing Drones & AI by Peter Carpenter

Drone racing is an exhilarating sport where pilots navigate small drones through a course using live video feeds from the drone's camera. The goal is to pass through all the gates in the correct sequence faster than competitors, testing skill, strategy, and quick thinking.

Peter played a YouTube video of championship drone racing involving drones fitted with sensors, cameras and inertial navigation sensors. The drones have to travel along a set course and through holes in square obstacles. AI was then used to program the drones for the races. The AI programmed drone called Swift, was then pitted against a couple of world champion drone racers. The video is available at https://www.youtube.com/watch?v=fBiataDpGIo
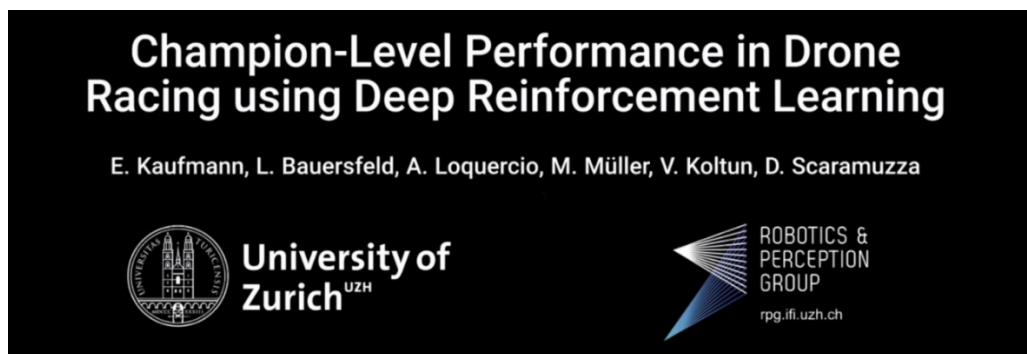

Figure 12 – Title and Author credits from YouTube video

In the video, Swift was the first autonomous system to reach champion-level performance in drone racing. Swift outperformed human champions from three different racing leagues and achieved the fastest recorded race time using only an onboard computer, a single camera, and an inertial sensor.
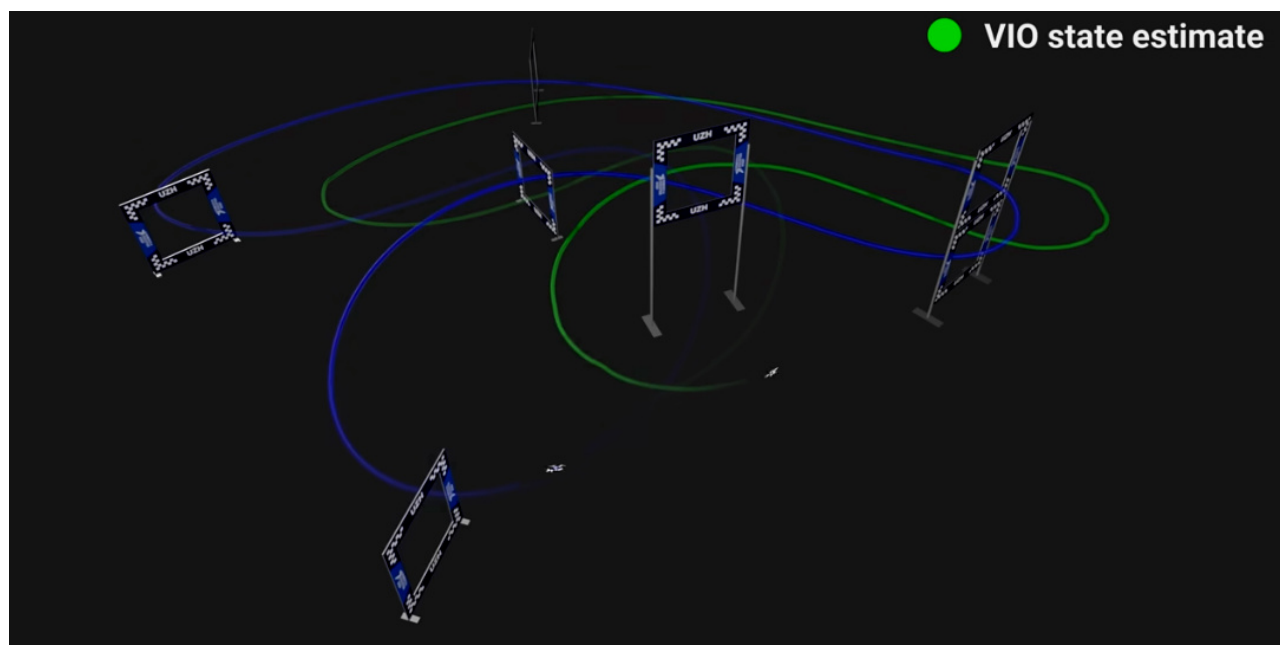

Figure 13 - Drone Racing obstacles and course layout

Swift utilizes visual-inertial odometry (VIO) to estimate its position, velocity, and orientation. However, to enhance accuracy during high-speed racing, Swift incorporates a learning-based detection system to identify racing gates in camera images. It then combines VIO estimates with gate position data using the PNP algorithm and a Kalman filter, reducing estimation uncertainty as it approaches gates.
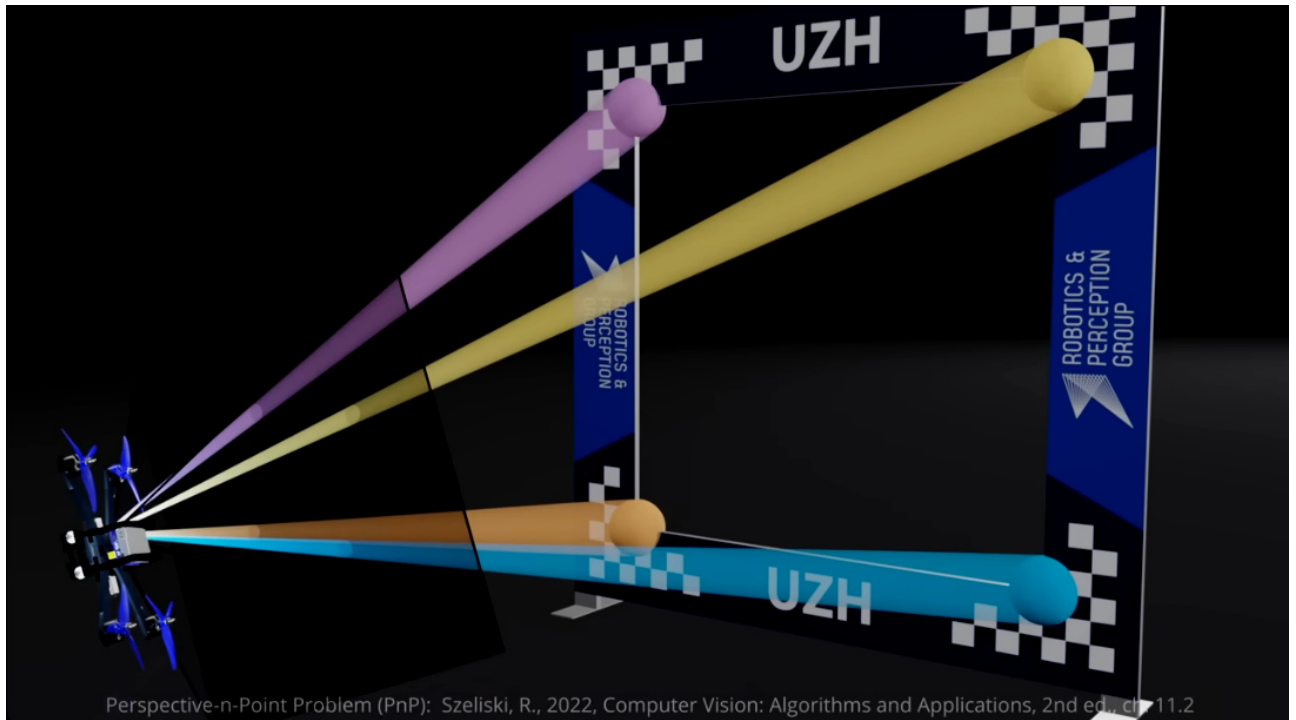
Figure 14 - Drone analysing gate position data

Benchmark tests against top human pilots, including world champions, showed that Swift's trajectories were more consistent across laps and allowed for tighter turns, giving it a significant advantage in a race. Ultimately, Swift's achievements represent a groundbreaking milestone in autonomous robotics, demonstrating world champion-level performance in a real-world competitive sport.
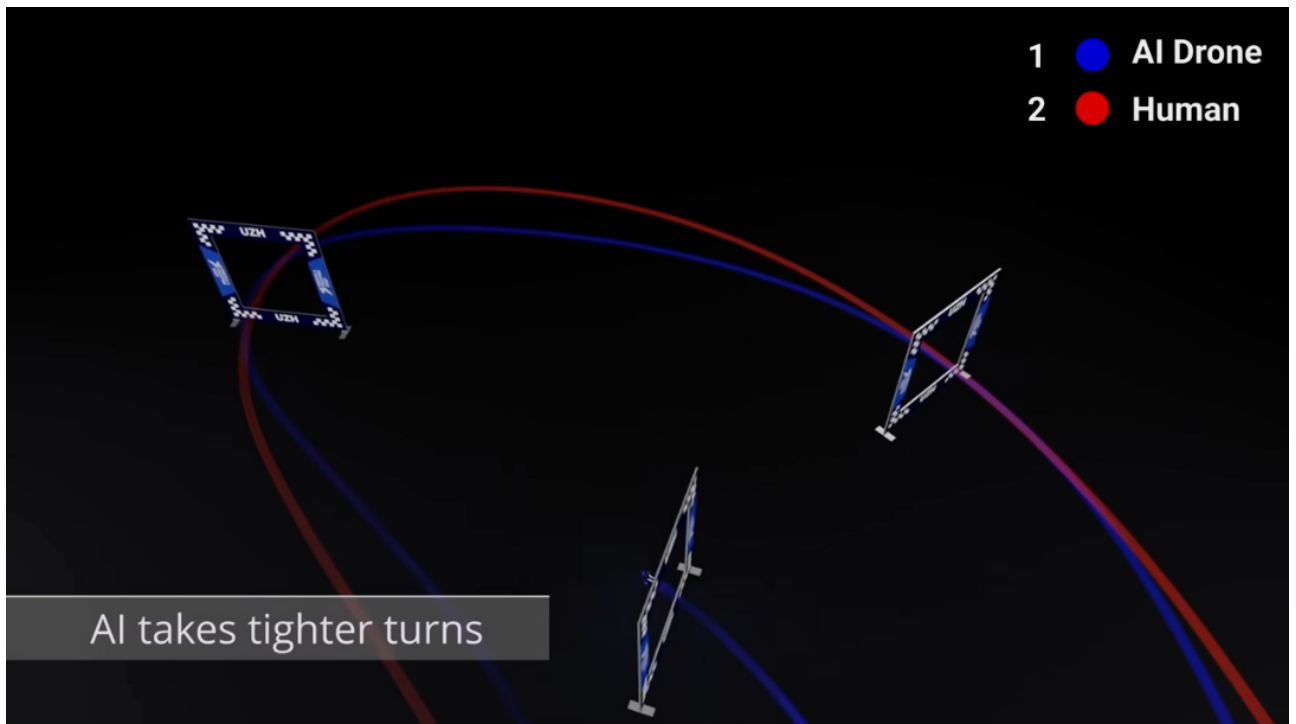

Figure 15 - AI drone wins by taking tighter turns

<u>Shutter Encoder</u> by Peter Carpenter

Shutter Encoder is one of the best video converters for handling both images and audio. It is based on FFmpeg and has an extensive range of features and handles a wide range of media formats. Many believe it has surpassed handbrake as the go to free video encoder.

Shutter Encoder offers a set of tools that are aimed at providing the means with which to handle and manipulate image, audio, and video content. Be it simple conversions or more complex, encodings or edits, Shutter Encoder features most of which you could expect from a media manipulation suite.

Shutter Encoder at first glance might seem simple and basic. However, once you select and drop a video into the display panel, an extensive range of tools appear with a various array of options for various data formats.
https://www.shutterencoder.com/en/

The main Shutter Encoder window comprises 4 main parts as shown in Figure 16.

1. Choose files – Drag & drop or Browse (Video or Audio)
2. Choose function section
3. Destination section
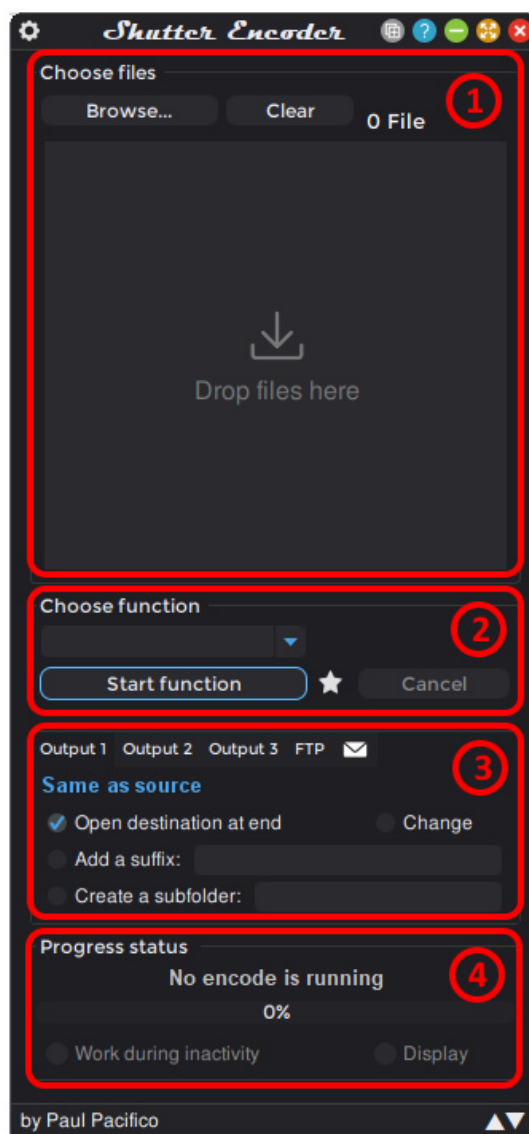4. Progress status

Figure 16 – Shutter Encoder User Interface

Some of the Shutter Encoder features Peter demonstrated were to drag and drop a video file into the files window, to re-encode the video file to mp4 by selecting a H.264 codec, how to mark the beginning and end of the clip, cut out that clip, adjustment sound levels, change resolution, apply fade in & out of video and audio, adjust the output file size and how to use video acceleration when using a GPU.

Shutter Encoder is a very powerful program and requires an understanding of codecs, formats, audio & Video bit rates, resolutions and more, so may not suit all users.

Figure 17 – Shutter Encoder, encoding a video file to H265

A good introductory Shutter Encoder tutorial is at
https://www.youtube.com/watch?v=dnnkzH8eWjk&t=45s

Although Shutter Encoder is able to do lossless cuts, without the need to re encode a video, Peter's next topic may be a better and simpler solution for users who only need to cut portions from a video.

__LosslessCut__ by Peter Carpenter

For those who may find Shutter Encoder too advanced, or only need quick and simple editing, LosslessCut is Peter's recommendation.
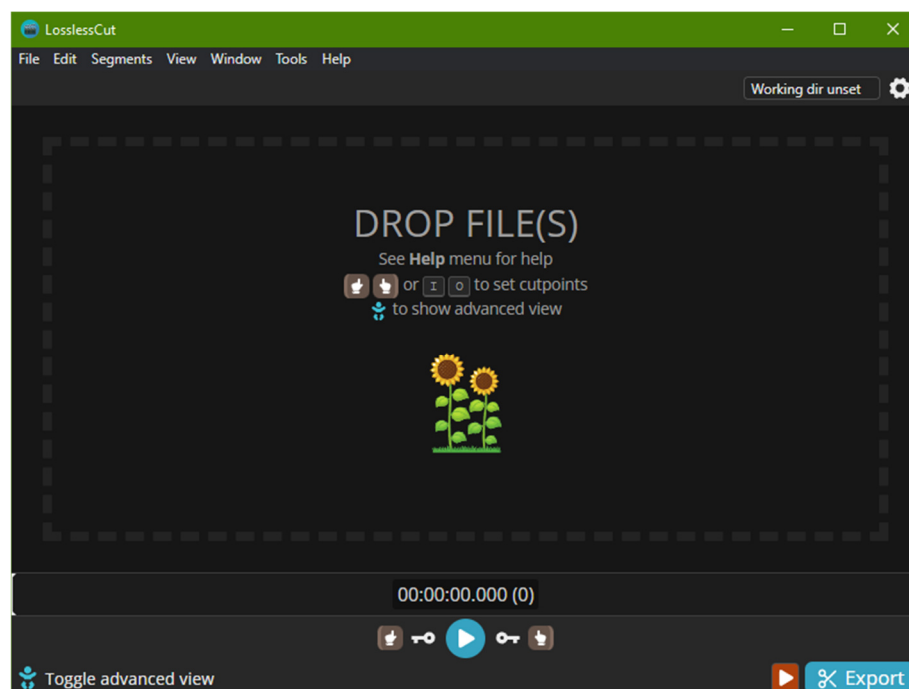

Figure 18 – Lossless Cut's default user interface

LosslessCut is a free video cutting software with a simple user interface. It enables users to trim sections of videos and quickly export them without re-encoding, ensuring quick processing of large video files.

To obtain Lossless Cut, you can navigate to the Github website at https://github.com/mifi/losslesscut. Once there, you can download the software, identified as LosslessCut-win-x64(1).7z. After downloading, extract the contents of the 7zip file and run the executable file (.exe) directly, eliminating the need for installing the software.

For convenience you may wish to add LosslessCut to the Windows Start Menu. To make LosslessCut available in the Start menu, you will have to manually add it into the Program Files folder. Create a *C:/Program Files/LosslessCut* folder and add the contents of the 7zip file to that folder. Next you then need to create a shortcut of *LosslessCut.exe* file and copy that shortcut to your Start Menu at C:/Users/(your name)/Microsoft/Windows/Start Menu/Programs.
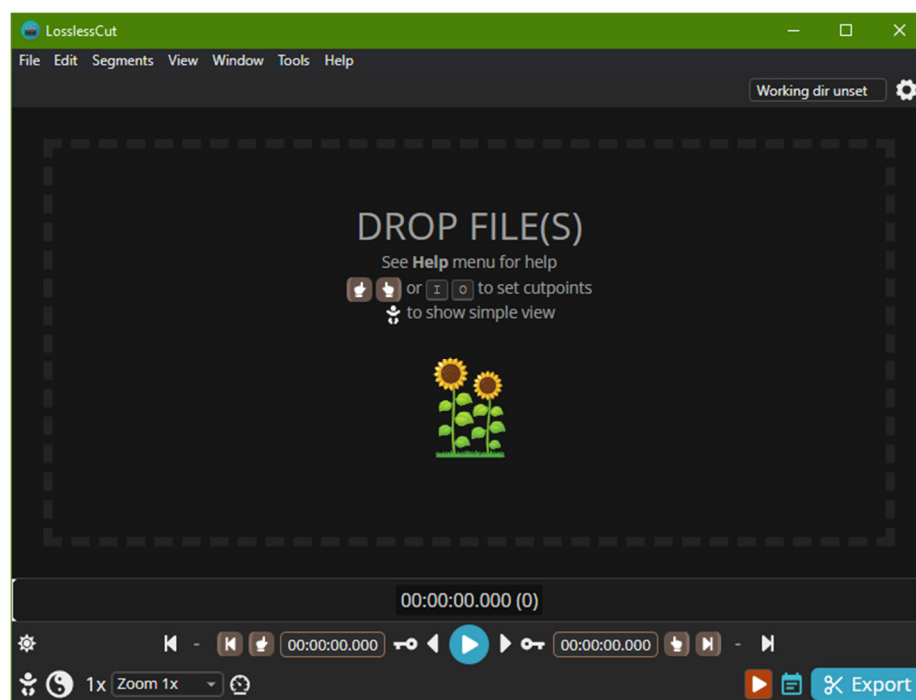

Figure 19 - Lossless Cut's advanced user interface

LosslessCut produces extremely fast and lossless editing operations on video, audio, subtitle and other related media files. The main feature is lossless trimming and cutting of video and audio files. This makes it great for saving space by rough-cutting your large video files taken from a video camera, television recording, MelbPC Zoom meetings, etc. It lets you quickly extract the good parts from your videos and discard many gigabytes of data without doing a slow re-encode that would reduce video quality. LosslessCut can add a music or subtitle track to your video, also without needing to encode. Editing is extremely fast because it does an almost direct data copy due to the free FFmpeg suite of multimedia tools used.

The User Interface
Upon opening Lossless Cut, you'll notice various elements as depicted in Figure 19. At the bottom, you'll find navigation, play, marker settings, delete, and export options. On the bottom left, there are zoom-in options, while the main area displays the videos. On the right-hand side, you'll find settings and options.

Moving to the top, there's a menu where you can open files, save projects, extract streams, and perform regular actions like cut, copy, and undo. Additionally, there's a toggle full screen option and a minimize option. Tools such as mirrors file, batch convert files, and others are accessible from the Tools menu, while the Help menu offers guidance.

Figure 20 - Lossless Cut displaying video segments to be exported.

Disadvantages
When videos are trimmed at other than keyframes, artifacts may be evident at the join points. This is usually insignificant in most cases. However, keyframes are shown on the timeline so cuts can be applied at those points.

There is an excellent series of LosslessCut tutorials available on TutorTube.

Neil Muller