

# Significant Bits

**Journal of Brisbug PC User Group Inc.**



**Vol 39 No 07**

*21 July 2024*

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## Meeting Timetable

### Mitchelton Library Helios Parade Mitchelton

9:30am	Q&A	John Tacey
11pm	Can we get Win 11 on an old computer?	Fred
1:00pm	Lunch -- Report to the Club	Keith
2:00pm	Linux Ubuntu Mate Workshop	Keith All

If you have a question that may need a bit of a look up, let me know before the meeting

Presentation can be done using Power Point and shared screens.



# Significant Bits

Journal of Brisbug PC User Group Inc.

## SIGNIFICANT BITS

the Journal of  
**BRISBUG PC USER GROUP INC.**

*A Computer Club for users of*

*PC-type computers*

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## CLUB NOTICES

Notice is given for the  
Club's AGM to be held on the  
18<sup>th</sup> of September

All positions are open for  
nomination  
Nomination forms will be in  
the August edition of the  
magazine or from the  
Secretary.

## CLUB INFORMATION LINES

Info Line (07) 3353 3121

The Members' Web Page

## Meeting Days

21 July 2024

18 August 2024

22 September 2024

20 October 2024

17 November 2024

22 December 2024

## Magazine

### Editor

Chris Haydock

### Proof-reader

John Tacey

## Submission Deadline

**Friday 5 July 2024**

Please use e-mail if possible

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Hi All,

The AGM will be held at the September meeting, all positions are vacant and nomination can be made using the Nomination forms at the end of the magazine. Or by request to the Secretary.

I will be away for the August meeting so members will need to consider if they want to do the day or cancel.

We will need to complete the Financial Statement for the 1 July 2023 to 30 June 2024 year and do the required verification for the Return to the Office of Fair Trading.

We have some changes to the Constitution arising from legislative changes for Incorporated Associations. The constitution requires amendment or we can leave it as is and by default the conditions will be by applied by the OFT. We have decided to follow that method. Some background to the changes is on page 4.

I am again taken a back with the speed with which AI is spreading and the number of options available to utilise it. I wonder when the Government(s) will catch up and put in some rules to control and govern its use. I don't think we can rely on any sort of user self-control. The question of Copyright is one that must need some clear parameters.

All for now

See you at the meeting

Keith

**PLEASE PAY YOUR  
MEMBERSHIP RENEWAL VIA  
DIRECT FUNDS TRANSFER**

**Brisbug PC User Group  
Inc**

**BSB No: 034-083  
Account No: 185711**

**Remember to enter your name  
and membership number in the  
comment field**

# Reports

## Presentation and Education

Presentation:

Morning 11am. Can we get Win 11 on an old computer?

After Afternoon 1pm: Linux Ubuntu Mate workshop

## Membership Report - Gary Woodforth

We had 8 members at the June meeting.

## Advice to Members re changes to our Constitution.

### Constitution changes.

You can go to the OFT and view the details or the Model Constitution which will cover the new requirements.

These requirements now form part of our Constitution and are referred to if we do not make changes ourselves.

The Committee has decided that with the changes made by OFT, we will not to make any change to our current document but will accept that we will rely on the default to the OFT clauses option.

The changes are

1. A change to the Financial reporting levels.
  - a. Now referred to as Large; Medium and Small.
  - b. The financial cut off has changes

We are now Small and the financial cut off is \$150,000 revenue.

2. Non Profiting from Position.
  - a. Requires a disclosure of any personal interests.
  - b. A statement to final accounts to the effect of any
3. Dispute resolution Procedures and Grievance procedure.
  - a. Must comply with the legislation.
4. Remuneration disclosure.
  - a. Must be as a report to the AGM and include details of any remuneration paid.
  - b. Must be reported even if the report is that none were made.

A motion will be made at the AGM to use the default clause from OFT.

## Treasurer's Report

June 2024

Opening Balance at 01/6/24 2145.48

### Income

Bank Interest 0.01

**Total Income 0.01**

Total Expenses 0.00

**Month's gain 0.01**

**Balance at 30/6/24 2145.49**

*Ross Skyring*

*Treasurer*

Please let the Committee know if you have any concerns on the approach.

Keith Catts  
President



## John's Jots

### Q&A - June meeting

#### Backup Long Life

Hardware

Operating System

Software

The following are extracts from Web pages.

#### The Challenges of Storing Digital Data for Decades or Centuries

If you're thinking about storing digital data for the long term, there are several challenges you should be aware of.

First, digital storage media like hard drives and SSDs can degrade over time and eventually fail. That means you must keep making new copies of long-term data before your storage devices fail.

Another challenge to consider is file format obsolescence. Some file formats may become outdated or incompatible with newer software as technology advances. That means even if your storage media survives, there may be no drives to read it, and even if there are, the details of the file formats you used to store that data might be lost.

#### The Problem: Optical Disc Data Rots

CD-Rs and DVD-Rs store data on a layer of dye that is melted by the laser when the data is written. This dye layer isn't completely stable and can chemically break down over time, causing data loss. Also, the reflective layer on the top of the disc can oxidize, making the data difficult to read.

As a result, many CD-R and DVD-Rs burned in the late '90s and early '00s are now unreadable in modern optical disc drives. And for those that remain, the clock is ticking.

What's the Best Way to Store Data for Decades or Centuries?

<https://www.howtogeek.com/858426/whats-the-best-way-to-store-data-for-decades-or-centuries/>

The CDs You Burned Are Going Bad: Here's What You Need to Do

<https://www.howtogeek.com/682807/the-cds-you-burned-are-going-bad-heres-what-you-need-to-do/>

#### TVs

Some TVs are being advertised as 2023 year models

Have we reached the situation where they are being sold by year of manufacture?

Operating Systems

There are a number of operating systems in use:-

General and proprietary by the OEM.

The most common is Android or 2 Google TV.

User interface

Is it easy to navigate and access required features? (e.g.)

Turn the sub titles (SSTL) feature On and Off

#### List of smart TV platforms

[https://en.wikipedia.org/wiki/List\\_of\\_smart\\_TV\\_platforms](https://en.wikipedia.org/wiki/List_of_smart_TV_platforms)

#### Best Smart TV for 2024

<https://www.cnet.com/tech/home-entertainment/best-smart-tv/>

#### 7 smart TV operating systems, ranked worst to best

<https://www.pocket-lint.com/smart-tv-platforms-ranked/>

#### The Ultimate Guide to Smart TV Platforms: Fire TV, Roku, WebOS, and More

<https://au.pcmag.com/tvs/93459/fire-tv-roku-webos-and-more-a-guide-to-smart-tv-platforms>

#### Windows Recall Feature Fiasco

The AI-powered Recall feature was scheduled to debut on June 18th.

Microsoft announced that the feature which screenshots nearly everything you do on new Qualcomm-powered laptops is being recalled.

<https://www.msn.com/en-us/money/other/microsoft-s-embarrassing-recall/ar-BB1oAFzn>

#### Apple Lightning Connection Failure

It turned out that the device connector was fine.

The connector on the cable was faulty.

It was noted that the Apple cable strain relief was of poor design.

With poor handling the cable will break at entry to the "strain relief".

This is not confined to Apple, many cheaper cables suffer from the same problem.

#### USB cable strain relief

Blaupunkt are quality cables with excellent strain relief.

Image of quality Strain Relief

<https://www.fruugoaustralia.com/usb-to-rj50-console-cable-with-molded-strain-relief-boot18m/p-280470115->

[623976417?language=en&ac=bing&msclkid=3d1354327231146187bb32b45957ccc4&utm\\_source=bing&utm\\_medium=cpc&utm\\_campaign=\(10-20%5D\\_AU&utm\\_term=4575067886174538&utm\\_content=Ad%20group](https://www.fruugoaustralia.com/usb-to-rj50-console-cable-with-molded-strain-relief-boot18m/p-280470115-623976417?language=en&ac=bing&msclkid=3d1354327231146187bb32b45957ccc4&utm_source=bing&utm_medium=cpc&utm_campaign=(10-20%5D_AU&utm_term=4575067886174538&utm_content=Ad%20group)

#### Power cable

Do not remove plug by pulling the cable

A broken earth conductor removes the earthing protection.

Note: This record of the Q&A session topics relies on my biological volatile memory (a.k.a. the 'forgettery').

## **Gleanings from e-newsletters and other sources.**

### **Reviews**

#### **How to Detect Text Written by ChatGPT and Other AI Tools**

By Chandra Steele Feb 09, 2024

We tested a range of AI-detection services with text written by ChatGPT and text written by a human: These are the tools that performed best.

<https://au.pcmag.com/help/99874/5-ways-to-detect-chatgpt-written-text>

### **New Releases**

#### **Adobe Air**

License: Freeware

File name: 51.0.1.3

File Size: 5.90 MB O/S: Windows

Publisher: Adobe Systems Inc

URL: <http://www.adobe.com>

#### **Avast Free Antivirus**

License: Freeware

File name: Avast\_Free\_Antivirus\_v24.5.9153.0  
(Web Installer)

File Size: 0.25 MB O/S: Windows

Publisher: Avast Software s.r.o.

URL: <https://www.avast.com/antivirus>

#### **Essential PIM 12.0.2**

License: Free

File name: Essential PIM.exe

File Size: 69.00 MB O/S: Windows

URL: <https://www.essentialpim.com/pc-version>

#### **Glary Utilities 6**

License: Freeware

Release Date:

File Name: Glary\_Utilities\_v6.11.0.15.exe

File Size: 26.40 MB Windows 8, 7, XP, 32/64bit

Publisher: Glarysoft Ltd

Languages: 44 Languages [Help Translate]

URL: <http://www.glaryutilities.com/>

#### **Release Notes:**

Optimized Disk Cleaner: added support for 'Corel VideoStudio Pro x9' and 'SketchUp Make 2014'

Optimized Tracks Eraser: added support for 'Corel VideoStudio Pro x9' and 'SketchUp Make 2014'

Optimized Software Update: optimized the version comparison algorithm, and increase the comparison speed by 30%.

Optimized Empty Folders Finder: add folder delete validation to prevent accidentally deletion of non-empty folder.

Minor GUI improvements ----- Minor bug fixes

Glary Utilities is a freeware with registry and disk cleaning, privacy protection, performance accelerator and amazing multifunctional tools. It can fix dogged registry errors, wipe off clutters, optimise Internet speed, safeguard confidential files and maintain maximum performance.

It is designed for both novice and professionals. User-friendly interface shows clear & detailed directions. For novice, all work can be done with just 1 or 2 clicks, while for professionals, abundant options are available.

Key features:

Optimise, clean and boost the speed of your Windows.

Protect your privacy and security.

Block spyware, trojans, adware, etc.

Fix certain application errors.

Simple, fast and user friendly interface.

For private use only.

URL: <http://www.glaryutilities.com/>

#### **Google Chrome (32bit) 126.0.6478.127**

License: Freeware

File name: ChromeSetup.exe

File Size: 103.68 MB O/S: Windows

Publisher: Google

URL: <https://www.google.com/chrome/>

#### **Keepass**

License: Freeware

File name: Keepass-2.57-Setup.exe

File Size: 4.20 MB O/S: Linux, Windows

Publisher: Dominik Reichl

URL: <https://keepass.info/>

#### **LibreOffice**

License: Freeware

File name: LibreOffice\_7.6.7\_Win\_x86.msi

File Size: 325MB O/S: Windows

Publisher: The Document Foundation

Comments: Contains the functions:-

Writer

PDF

Presentation

Spreadsheet

URL:

[https://mirror.freedif.org/TDF/libreoffice/stable/6.2.0/win/x86/LibreOffice\\_6.2.0\\_Win\\_x86.msi](https://mirror.freedif.org/TDF/libreoffice/stable/6.2.0/win/x86/LibreOffice_6.2.0_Win_x86.msi)

#### **Mozilla Firefox**

License: Freeware

File name: Mozilla\_Firefox\_(32bit)\_v127.02.exe  
Update

File Size: 59.1MB O/S: Windows 7 to 10

Publisher: Mozilla Corporation

Comments:-

To force a manual update:-

Menu Button > ? Button > 'About Firefox'

URL: <https://www.mozilla.org/en-US/firefox/new/>  
**Mozilla Thunderbird**

License: Freeware

File name: Thunderbird Setup 115.12.2(GB).exe

File Size: 55.20 MB O/S: Windows XP SP2 to 10

Publisher: Mozilla Corporation

URL: <http://www.mozilla.org/en-GB/thunderbird/>  
**NotePad++ (32bit)**

License: Freeware

File name: NotePad\_v8.6.8.exe

File Size: 4.61 MB O/S: Windows

Publisher: Notepad++

URL: <https://notepad-plus-plus.org/>

**Recuva**

License: Freeware

File name: 1.54.120 File Size: 25.25 MB

O/S: Windows

Publisher: Gen Digital Inc

Other programs: CCleaner, Defragler, Speccy

URL: <https://www.ccleaner.com/recuva/download>

**VLC Media Player (32bit)**

License: Freeware

File name: VLC\_Media\_Player\_(32bit)\_v3.0.21.exe

File Size: 41.13 MB

O/S: Windows XP SP3 to the last version of Windows 10.

Publisher: VideoLAN Project

URL: <https://get.videolan.org/vlc/3.0.3/win32/vlc-3.0.7.1-win32.exe>

Want more? See the New Releases list:

<http://ct.com.com/>

**Tips etc.**

**End of Support for Windows 10? Not So Fast**

By Michael Kan Jul 04, 2024

For \$27 per year, Slovenia-based Opatch will keep your Windows 10 machine up to date with critical security patches for up to five years once Microsoft ends support.

<https://au.pcmag.com/migrated-15175-windows-10/106011/end-of-support-for-windows-10-not-so-fast-says-third-party-company>

**How to Upgrade to Windows 11 for Free (Even if Your Computer Is Unsupported)**

By Lance Whitney Jun 28, 2024

Whether or not your Windows 10 PC is eligible for a Windows 11 upgrade, there are a few ways to jump to Microsoft's newer OS without paying for it.

<https://au.pcmag.com/migrated-15175-windows-10/90247/how-to-upgrade-to-windows-11-for-free>

**Microsoft Windows 11**

By Michael Muchmore Jun 27, 2024

More than a new look for Windows

A radically modernized, more consistent design for Windows 11 belies what is really more of an evolutionary update. The addition of generative AI tool Copilot takes Microsoft's operating system to the next level, however.

<https://au.pcmag.com/operating-systems/87991/microsoft-windows-11>

**Microsoft Seems to Wipe Tutorial for Switching to Local Account on Windows**

By Joe Hindy Jun 25, 2024

Redmond argues that a Microsoft Account is better than a Local one since it allows for seamless integration of Microsoft services, enhanced security, and sync across devices.'

<https://au.pcmag.com/migrated-15175-windows-10/105873/microsoft-seems-to-wipe-tutorial-for-switching-to-local-account-on-windows>

**Here Endeth John's Jots**

## APCUG ARTICLES

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### Exploring Linux, A Backup Solution for Linux Systems

by Alan German, Treasurer Ottawa PC Users' Group, Ontario, Canada <https://opcug.ca>  
Editor: [brigitteford@opcug.ca](mailto:brigitteford@opcug.ca)

While several disk imaging programs are available to back up Linux systems, very few feature a graphical user interface (GUI). Foxclone is one of the exceptions. Furthermore, it is open-source software with two major features that make it worthy of further examination.

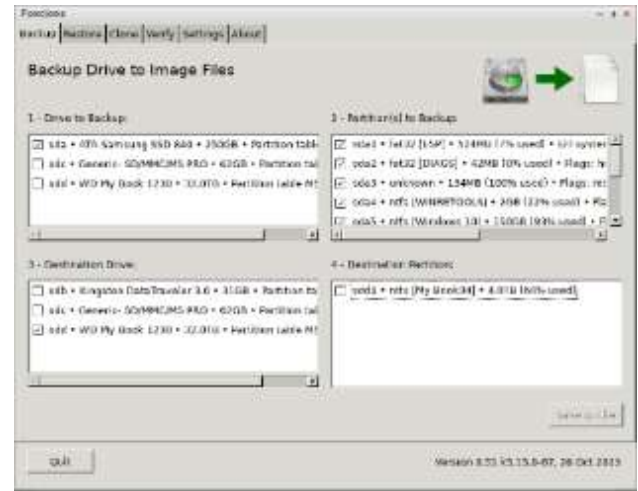
Foxclone can be downloaded in two versions, each providing an ISO file. One version, labeled as standard, is based on Ubuntu Linux Version 18.04 (Bionic Beaver). The focal version is based on Ubuntu Linux Version 20.04 (Focal Fossa).

I selected the most recent version and installed the ISO file on a multi-boot USB drive using Yumi (<https://pendrivelinux.com/yumi-multiboot-usb-creator/>). Foxclone isn't supported directly in Yumi, so it is necessary to select *Try an Unlisted ISO* as the source for the ISO file. Once the relevant files have been copied, the USB can be booted, and Foxclone is listed in the boot menu under the category *Unlisted ISOs* as the file *foxclone51\_focal.iso*.

Booting from this menu item loads a Linux desktop that includes icons for Foxclone and the Fox guide user manual: a file manager and a web browser. The Linux panel (equivalent to the Windows taskbar) is displayed across the bottom of the screen, with a button to access the main menu in the lower-left corner. The options available are more limited than those for a full Linux distro. However, they still include applications such as a text editor, PDF reader, Terminal, and the GParted partition editor.

Running Foxclone displays the main program window with sections where the drive is to be backed up, its partitions, and the destination drive and partition, which can be selected for the

backup process. The program scans the computer's filesystem and populates the entries for the source and target drives. Consequently, the backup drive must be present when Foxclone is initiated so that it can be displayed as being available as a target.



Once a drive to be backed up has been selected, all the partitions on this source drive are automatically selected for backup. Still, individual checkboxes allow the selection to be refined. Selecting an external USB drive as the destination drive and pressing *Save to File* brings up a second dialogue box where the target location can be further specified by browsing the drive's file system. Other options are to create a backup folder and overwrite the current date (in the format 20240215) as the default prefix for the names of the backup files.

A final dialogue box requests confirmation of the backup selections, and pressing *OK* starts the backup process. The result is essentially a series of compressed image and text (log) files that relate to the contents of the individual disk partitions (identified here as sda1, sda2, etc.)

My Book04 (M:) > z\_images > Foxclone

Name	Date modified	Size
20240215.backup	2024-02-15 5:42 AM	2 KB
20240215.grub	2024-02-15 4:58 AM	1,024 KB
20240215.sda1.img.gz	2024-02-15 4:58 AM	17,560 KB
20240215.sda1-log.txt	2024-02-15 4:58 AM	1 KB
20240215.sda2.img.gz	2024-02-15 4:58 AM	21 KB
20240215.sda2-log.txt	2024-02-15 4:58 AM	1 KB
20240215.sda3.img.gz	2024-02-15 4:58 AM	45,629 KB
20240215.sda3-log.txt	2024-02-15 4:58 AM	1 KB

Restoring a disk image or partition is essentially the reverse of the backup process and is accessed



through the *Restore* tab at the top of the program window. Other tabs provide options to clone disks, verify backups, and change various program settings. An *About* tab indicates the software version and its release date, together with a notice that the program is free software under GNU General Public Licence (GPL) terms.

The Foxclone User Guide (63 pages) can also be downloaded from the developer's website. The manual provides clear, detailed instructions about every aspect of using the program, with the text illustrated using annotated screenshots. Documentation is even provided on the utility programs (image viewer, text editor, etc.) provided in the distribution, with overviews of disk partitioning and bootloaders.

Foxclone supports both Linux and Windows, runs from a bootable USB drive, is intuitive, and has excellent documentation. The program runs a Linux distro as a live USB, and while this won't be an issue for Linux users, even those familiar only with Windows will know to double-click the Foxclone icon on the desktop to run the program. The user interface is simple, and the backup process is easily understandable, so running this software is worth a try.

Bottom Line

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### **AI – What Next?**

By Tom Burt, Vice President. Sun City Summerlin Computer Club.

<https://www.scscc.club>

I recently came across an article from TechRepublic reviewing Intel's new Core Ultra and Xeon CPU chips with onboard support for AI. Here's the link to that article:

<https://www.techrepublic.com/article/intel-ai-everywhere-event-2023>.

I shared the article with our Tuesday Kaffee Klatch group. A friend replied, "Really interesting! What's Next?" In this article, we'll explore that question.

My first thought was, "What is AMD doing?" I ran a quick web search and immediately found that AMD has a family of Ryzen AI CPUs

offering AMD's XDNA architecture. Here's a link to AMD's web page:

<https://www.amd.com/en/products/processors/consumer/ryzen-ai.html>

My next thought was, "What is ARM doing?" Sure enough, ARM also has CPU chips with onboard support for AI. ARM CPUs are the dominant chips on cell phones, tablets, and recent Apple devices. Here's a link to ARM's web page:

<https://www.arm.com/markets/artificial-intelligence>

So, all the major CPU chip families used in servers, PCs, laptops, and mobile devices incorporate onboard AI support. AI apps like ChatGPT, Bard, and Claude can run on your PC, laptop, or mobile device rather than on a cloud-based server farm. As this technology rolls out over the next few years, it will augment the available worldwide AI processing power by several billion devices.

### ***Futurism***

Usually, I avoid trying to predict the future, especially with technology. Reality tends to outstrip even "far-out-there" predictions. However, I'll have to make a few SWAGs in a "What's Next?" article, especially since I'm writing this at the beginning of the new year. However, I'll probably look at this a few years from now and laugh wryly at my naiveté. Let's look at areas where this new onboard CPU support for AI may significantly impact.

### ***Speech Recognition and Generation***

Speech recognition has come a long way since my software engineering days at Citibank's Transaction Technology Institute in the mid-1980s. Today, we are at the point where humans can talk to machines using natural, colloquial language and be understood. Even accented speech can be understood. Further, machines can now speak in natural voices and be easily understood by humans.

Machines can also translate textual content from one language to another. Combining translation with voice recognition and synthesis brings us to

the realization of the science fiction concept of a universal translator.

A quick search on Google turned up two Android apps and an iOS app that offer this functionality today:

[https://play.google.com/store/apps/details?id=com.speakandtranslate.voicetranslator.alllanguages&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=com.speakandtranslate.voicetranslator.alllanguages&hl=en_US&gl=US)

[https://play.google.com/store/apps/details?id=com.erudite.translator&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=com.erudite.translator&hl=en_US&gl=US)

<https://apps.apple.com/us/app/itranslate-voice/id522626820>

For desktop computer users, Google Translate can recognize speech and translate it.

Currently, these apps, while very capable and well-rated, seem to depend on cloud-based servers for the actual translation intelligence. This means their ability to function depends on having an Internet connection. As the new CPU chips mentioned above become commonplace in mobile devices, look for more of this functionality to operate on the mobile device itself with better performance.

If you're a regular Zoom user, you've likely come across its live captioning and transcription features. Zoom can do real-time voice recognition of all the voices on a Zoom session and display the speech as text in a running window at the bottom of the screen. This is a huge aid to hearing-impaired participants. Similar technology is now providing captioning for online videos and other audio streams. For Android and iOS smartphones, there are Live Transcription apps:

<https://play.google.com/store/apps/details?id=com.google.audio.hearing.visualization.accessibility.scribe>

<https://apps.apple.com/us/app/live-transcribe/id1471473738>

Looking ahead, with advanced CPU chips in smart TVs, it becomes feasible for the TV to automatically generate live captions of any incoming audio stream and do on-the-fly translation of the source audio stream language to another language.

## *Customer Service*

Customer service is a fertile area for applying voice recognition and synthesis. Consider a service application that can run on your smartphone, tablet, laptop, or desktop or a service kiosk, displaying a photo-realistic human face and torso, that can converse colloquially with you in any language and has a vast knowledge of the business's products, services and policies, federal, state and local regulations and has the reasoning and operational skills needed to resolve virtually all classes of customer support problems.

Customer Service is a huge cost for all businesses, a large part of which is recruiting and training service representatives. The service activity often has a high turnover rate, meaning the training expense is recurring. Also, policies and products may change frequently, requiring training updates for existing staff. An essential virtue of a "smart" customer service application is that only one master copy of the application needs to be updated, and those updates can be replicated automatically and nearly instantly in all instances of the application. Another virtue is that a "smart" service application is tireless – it will work 24 hours/day, 365 days/year, and doesn't get sick, take vacations, or lose patience with demanding customers.

Every business is somewhat different; consequently, its customer service applications must be customized. Having on-chip AI support in the CPUs of the business's in-house servers will make it easier to keep this customization and give better performance than depending on cloud-based servers. It also gives the business greater control over what data stays "in-house."

## *AI Companions*

AI companions are an evolution of "smart" assistants like Siri, Alexa, and Cortana. Here are two articles that discuss the state of AI companion services:

<https://cybernews.com/tech/ai-companions-explained/>

<https://theweek.com/tech/the-pros-and-cons-of-ai-companions>

These systems today run on cloud servers, but with advanced AI CPUs, they should evolve to run directly on users' devices. This will provide better performance and prevent some concerns about personal information learned by these companions from being in the cloud.

### ***Merging of AI and Robotics***

In the past few years, there have been significant advances in robotics. Robots can now "see" via cameras, radar, and lidar and "hear" via microphones. This has helped in factory automation and many other repetitive actions. Self-driving vehicles are a reality, though they still need refinement.

There's also a lot of work on humanoid robots – robots with a head, torso, arms, hands, and feet that can perform tasks traditionally done by humans. These robots have been research projects but are beginning to be deployed in manual labor settings. Here are two links that survey what's current in the field. The YouTube video is quite remarkable.

<https://builtin.com/robotics/humanoid-robots>  
<https://www.youtube.com/watch?v=gFp18nW7p34>

The humanoid robotic form has some challenges: The mechanical and software algorithms to keep the robot upright, especially on stairs and uneven terrain, are complex. The many small actuators needed to animate the robot's limbs draw a lot of power, which requires a large battery pack and regular recharging every few hours.

With advanced AI support in the CPU chips powering robots of all types, the robots should have more autonomy; they won't need to access the Internet cloud as much to provide their "intelligence." We can foresee a time not very far in the future when humanoid robots may serve as effective caregivers, nannies, servants, and companions in home and institutional settings. This could significantly improve the quality of life for aging seniors who are often alone and frail.

### ***Final Thoughts***

As is often the case, I've barely scratched the surface of the vastness of artificial intelligence. I kept thinking of more things to discuss as I wrote

this article. I'll return to this topic now and then in 2024, both in articles and in a few of my monthly seminars.

Robotics and AI are not without concerns. Human workers, especially those in lower-skilled manual and clerical jobs, will likely be displaced. Even in creative professions, AI may be able to replace many workers by automatically synthesizing new works of art. Society must have a plan for repurposing these displaced workers.

AI will affect business, generally making it more efficient and productive. However, it can also make it easier for companies to manipulate consumers.

AI can amplify the power of government for good and evil. In the hands of despots, AI could become the ultimate tool for imposing tyranny. Used for good, AI may vastly elevate happiness and prosperity worldwide.

### **Another Look at Artificial Intelligence**

By Joel Ewing, President, Bella Vista Computer Club. Bits & Bytes, February 2024.

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(For a general description of artificial intelligence, also see the article "What Is Artificial Intelligence" in the April 2019 edition of the BVCC *Bits & Bytes* at <https://bvcomputerclub.org/PDF/B&B/2019-04.pdf>)

### **Background**

Although having a background in Computer Science, I do not consider myself an expert on AI; but like many, I have seen over the last decade the improved (but not perfect) ability of smartphones to translate the spoken word into written text, catboats on the Internet and telephone call centers that can briefly make you think you have reached a human, and the fairly sophisticated behavior of "self-driving" cars, including some experiments with autonomous self-driving vehicles in restricted environments.

When in full "self-driving" mode, a Tesla car can recognize enough of the environment around it to sense and follow lane markings, sense other vehicle types and their relative speeds on all sides,

interpret speed limit signs, stop signs, stop lights, a variety of warning signs, speed limit signs, adjust speed for sharp curves and slower vehicles, to make decisions on passing slower vehicles. When navigation mode to a destination is engaged, an extensive road map database allows it to know when to turn and what lane it needs to be in for the next turn, to suggest the optimal super-charger stations for long trips, and to automatically pre-condition the battery temperature for optimal charging speed before arriving at a charging station to minimize charging time. Yet with all that sophistication, Tesla's most important safety features are (1) monitoring the human driver for alertness and (2) alerting the human driver to take over if the road conditions go outside the bounds the automation can reliably handle. This is great for removing much of the monotony of long-distance driving on consistently marked interstate highways but not so valuable for city driving, where road repairs, obstructions, and local driving customs tend to demand more human interaction.

The topic of AI was recently raised in a professional computer-related online discussion list I follow. I have also been involved in a church-related Religion & Science group meeting on Zoom over several years that have discussed, among other topics, whether humans are the only life forms on Earth that are conscious or aware, AI, and whether machines could ever cross the thresholds of self-awareness and become aware and direct competitors of humans, possibly even a threat. Some of the following thoughts come from those discussions.

#### AI Current Capabilities

AI may easily surpass humans in the ability to analyze and deduce conclusions from a large amount of data and propose actions – it already has done that in some areas that are sufficiently limited in scope.

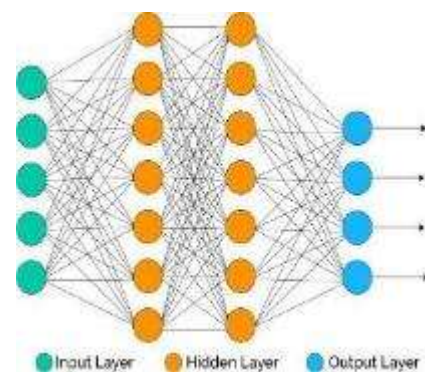
AI is already being utilized to assist in medical diagnosis, such as interpreting medical scans, where large scans may need to be analyzed tediously to look for minor anomalies.

Many Internet search engines utilize some AI techniques to improve the quality of the results. Some of the more interesting recent free Internet search additions are ChatGPT, BardAI, and

BingAI, which can accept queries in natural language and return paragraph responses that appear appropriate, almost human-like. It is possible to request responses in the form of specific types of poetry (ChatGPT) or to request the creation of an image featuring certain objects (BingAI).

Without getting too much into details, at least two main techniques are involved under the covers for the deep learning of advanced AI: trained digital neural networks and large databases created by analyzing many natural language sources of information.

Digital neural networks attempt to emulate the brain's design on a small scale. The idea is that you have a large number of nodes (neurons) that are interconnected to nearby layers of the network, but that each of the interconnections can be adjusted by giving a "weight" to each of the connection paths to determine what strength of incoming signals is sufficient to activate the neuron.



To "teach" a neural network, you must supply many different combinations of input signals (on the left), for which the desired output (on the right) is known, and modify the weights so that the correct outputs are obtained for as many as possible, hopefully, all, input value combinations. This is a computationally expensive and, thus, energy-intensive process, but once the best weights are obtained, it is easy to replicate the neural network. The illustration on the right only has 23 nodes. A useful neural network may have thousands of nodes.

Neural networks are particularly useful for cases without clear written rules for arriving at the outputs, like pattern recognition of images and sounds, interpreting the ambiguous parts of natural language speech and text, and predicting

large social system behavior like the stock market. While it can be hoped that a new combination of inputs not used in the training process will also produce reasonable outputs, this is not guaranteed and heavily depends on how the training data was chosen. Another drawback of neural networks is that there is no way to explain how they arrived at any specific output from some specific input.

It is clear from ChatGPT's behavior that it has access to an extensive database of contemporary and historical literature. Whether that does or should include those materials still under copyright protection is debated as to whether that violates fair-use restrictions. To be of greatest use, the natural language must be parsed to determine what is being discussed (nouns) and related descriptions (adjectives) and actions (verbs) and deduce further relationships. From that, it is possible to produce indexes and statistical probabilities of relationships. Applying a similar parsing to information requests, it is possible to either find sentences or paragraphs relevant to the query or (more complex) possibly construct "original" relevant sentences based on known associations with the query topic.

#### AI Limitations

One problem that needs to be addressed is that a considerable amount of data is loose in the real world, which is misinformation, and too much garbage in still produces garbage.

Many humans have problems telling the difference between fact and fiction and between reality and conspiracy theories. Humans have biases in their data choices, yet they will choose the data sources to program future AI. This will inevitably cause some problems.

Every year, you find people, sometimes prominent people, that stumble across a parody or satire written in the style of a news article, mistake it for real news, and make a fool of themselves by calling others to take action against the alarming "news" they have just uncovered. Such humor is usually so over-the-top that it is easily recognized by ordinary people aware of current events. However, some still take it as factual, even if it is on a website like "The Onion," which is well-known for only publishing imaginary news releases.

One needs to understand that while AI can

provide helpful guidance within the realm for which it has been trained, it is not infallible. If you ask a neural network to categorize an unexpected combination of inputs, it may make an incorrect identification. Suppose you ask an AI system trained from analyzed text about a topic that lacks accurate information. In that case, it may make incorrect inferences from data that it thinks are similar because they appear statistically related. Even if it has processed relevant information, it may not be able to accurately interpret context, implicit relationships, and time ordering of relationships. If you ask an ambiguous question ("Show me something like X"), the AI may not understand the distinction between creating something fictional that looks like "X" versus finding a fact like "X."

There have already been at least two instances reported in the news of a judge berating attorneys for submitting supporting briefs referencing legal precedents that didn't exist because some AI system created a plausible fictional reference to support their legal argument.

The general public is already indifferent to AI's limitations and abusing AI: asking questions of AI apps in areas where the AI is poorly trained and trusting without verification of fallible responses as being authoritative because a machine produces them. Some newsworthy cases of this abuse have been reported when fatalities result after owners of cars with AI autopilots requiring supervision find ways to entrust the AI with unsupervised autonomous driving, and a crash occurs when the AI encounters situations it is not designed to handle.

#### Could AI be Dangerous

Some theorize that if we could build a neural network of enough complexity – many orders of magnitude larger than possible today – at some point, a threshold might be passed. That creation might become self-aware and possibly worthy of being called sentient. What discoveries such a tool could make and create! The problems are multi-fold: If it has more knowledge than any human and can exercise creative thought faster than any human, its analysis of human history may lead it to the conclusion it should be the master, not the enslaved person, of humans. This has long been a persistent cautionary theme of science fiction writers. In the fictional Dune prequel "The Battle

of Corrin," where sentient machines and humans have long been at war, there is a fictional quote from the sentient robot Erasmus: "Humans were foolish to build their competitor – but they couldn't help themselves."

Suppose we were to succeed in creating machines that could truly approach the complexity and creativity of the human mind. Might they not also be subject to some of the same dangerous mental instabilities as human minds when confronted by conflicting "facts" or subtle design deficiencies? Fatal problems like those afflicted the fictional HAL 9000 in "2001: A Space Odyssey" and the M-5 Multitronic computer in "The Ultimate Computer" Star Trek episode.

I don't think we are at any risk within my lifetime of finding a way to cross that threshold, but that doesn't mean that we shouldn't be concerned that AI in its present state has the capability of causing harm.

AI-based tools used by financial institutions to evaluate whether to approve or deny credit requests have been found to exhibit bias against granting loans to those in minority groups. The AI tools were programmed using data about loans that had been approved subject to historical biases against minorities. Without great care in programming, AI can be used to justify that there is no bias when the reality is that the bias was included in the AI programming and is just more hidden.

Another way we are already seeing AI being abused is by its use to create and spread misinformation on the Internet. While not perfect, it is already good enough to produce deep-fake video and audio and false news reports and control bots on social media networks that spread messages to promote and amplify division and hate. There is some hope that it may be possible to employ AI on the other side to detect and suppress such abuse, but that does require corporations to accept that responsibility.

Another area that should be a serious concern is the possibility that AI could be given the power to make and implement life-and-death decisions without adequate human oversight or just to propose actions that humans might blindly follow in a life-or-death situation. The science fiction genre is full of plots suggesting how badly this can go – possibly human enslavement or

extinction.

When you grant AI the power to make decisions and take actions in the real world, most of us want "intelligence" involved, wisdom, and morality. Most of us want decisions made by others that impact our lives to be constrained by a moral compass of what is right and fair. We have no idea how to build that awareness into AI, and since there is no universal agreement on whose standard of morality to use, that may be an impossible task. Even if there was agreement on how to define morality and how to embed that concept into AI, do we trust fallible humans to consistently implement that design without error?

A legitimate concern is that if future AI regulation or its enforcement is inadequate, some individual or corporation with more power and money than wisdom may go rogue, ignore whatever AI restrictions are in place or commonly accepted, and create a dangerous AI device because of a belief it will enhance their short-term profit.

We must be very cautious about what kinds of decisions and actions we entrust to AI in the short and long term. We also need to research how best to enforce that caution. Perhaps future AI, appropriately applied, might even become part of the solution

**BRISBUG PC USER GROUP INC**  
**4 Bacall Place Stafford Heights , QLD 4053**  
**NOMINATION FORM**

**Please return completed form to "The General Secretary" at the above address**

**NOMINEE** I, .....hereby accept nomination to serve on the Management Committee of **BRISBUG PC USER GROUP INC** for the term commencing from the next Annual General Meeting of that group and ending at the Annual General of the following year. I understand that this nomination will only be valid if I am a "fully paid-up" financial member of BRISBUG (as defined in its Constitution) PRIOR to the official commencement of the Annual General Meeting, at which the vote for election to the position for which I am nominating is taken.

POSITION FOR WHICH I AM BEING NOMINATED .....

NOMINEE'S SIGNATURE .....DATE .....

**NOMINATOR**

I, ..... hereby nominate the above-named for election to the requested position on the Management Committee of BRISBUG for the term indicated. I acknowledge this nomination will be void if it is found that I am not a "fully paid-up" financial member of BRISBUG as at the closing date for acceptance of written nominations in accordance with the BRISBUG constitution.

NOMINATOR'S SIGNATURE .....DATE .....

**SECONDER**

I, ..... hereby second the above nomination for election to the requested position on the Management Committee of BRISBUG for the term indicated. I acknowledge this nomination will be void if it is found that I am not a "fully paid-up" financial member of BRISBUG as at the closing date for acceptance of written nominations in accordance with the BRISBUG constitution.

SECONDER'S SIGNATURE..... DATE .....

NOTE: Persons nominating for a position who have not had their membership formally accepted at a BRISBUG Management Committee Meeting shall be deemed to have had their application for membership formally accepted should they be elected to the position for which they have nominated.

**OFFICE USE ONLY**

MEMBERSHIP STATUS NAME	MEMBERSHIP NO	FEES PAID TO	RECEIPT NO
NOMINEE			
NOMINATOR			
SECONDER			