Newsletter of the North Orange County Computer Club

range Bytes

Volume 48 No 8 August 4, 2024 $1.50

NOCCC meetings for Sunday August 4, 2024

MAIN MEETING

Speaker, speaker topic, or presentation was not available at press time, an email will be sent out.

Special Interest Groups (SIGs) & Main Meeting Schedule

9:00 AM – 10:30 AM

Beginners Digital Photography .....Science 131
Questions and Answers about Digital Photography

Linux for Desktop Users.....Science 127
Beginners' Questions about Linux

10:30 AM – 12:00 PM Noon

3D Printing .....Science 127
Questions and Answers about 3D printing

Advanced Digital Photography... .....Science 131
Questions and Answers about Digital Photography

Linux Administration .....Science 129
More topics about the Linux operating system

Mobile Computing.....Science 109
We discuss smart phones, tablets, laptops, operating systems and computer related news. **Waiting for a new leader.**

12:00 PM Noon – 1:00 PM

3D Printing..... Science 127
Questions and Answers about 3D printing if requested.

PIG SIG ..... Irvine Courtyard
Bring your lunch. Consume it in the open-air benches in front of the Irvine Hall or join the group that goes to the student cafeteria. Talk about your computer(s) and life experiences.

1:00 – 3:00 PM Main Meeting

At the June meeting, the topic was AI.
At the July meeting, the topic was AI.
In the August Bytes, the topic was AI.

At the August meeting, we will try to find something different for the Main Meeting topic.

BOD…..3-4PM…….. Science 129

3:00 PM – 4:00 PM

Board Meeting……
Science 129

Verify your membership renewal information by checking your address label on the last page. If it is not right, let the treasurer know.

Mark your calendars for these meeting dates
2024: Aug 4, Sep 8, Oct 6, Nov Dec 3,
2025: Jan 5, Feb 2, Mar 2 Apr 6, May 4.

Coffee, cookies and donuts are available during the day in room 129 .
Food and drinks need to remain outside the Irvine Auditorium.

"Friends Helping Friends"
since April 1976

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Special email addresses
Jim Sanders is: editor@noccc.org
membership@noccc.org

Our Website
WWW.NOCCC.ORG

Reminder: Membership expiration dates are based on the date that you joined the club. **Example**, you joined or re-upped your membership in the club in October of 2023. That means that in October 2024 you should pay your membership dues. In the address label area of the Orange Bytes is your join month/ expiration month.

Reprint Policy

Board of Directors

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Editor's Report

For the last two meetings we have been talking about AI. The first meeting dealt with the use of AI in an advertising agency. The ease with which ads could be generated without having to actually go to a site to take a picture was emphasized. The ability to modify that picture once it was created was demonstrated. The ability to create whimsical images was pointed out. Requesting an image of a rabbit wearing a cowboy hat riding on a horse can result in a interesting image. The use of various AI programs to generate text is a very large usage of the current AI. If you need to generate a description of a particular item, AI can do it for you. Eric Stein demonstrated that capability when he showed how he had submitted a picture of New York City and asked the artificial intelligence that he was using to describe the photo. The textual description of the photo turned out to be quite accurate.

There has been a lot of discussion about how much compute power that the various artificial intelligence applications are requiring in order to do their increasingly complex work. IBM's Watson cancer AI deals with evaluating the Cancer Research publications written by the nearly 10,000 worldwide cancer researchers. Around 100,000 papers are published each year around the world.

It is impossible for anyone researcher to read even a small portion of the publications that his peers generate. The Watson artificial intelligence program can read all of those papers in a very short period of time. It is then able to analyze all of those publications and look for any relationship between the research of different researchers. By doing so, any potentially new and encouraging treatments for particular types of cancer can be highlighted. This is just one example of an area where AI is doing really great work right now.

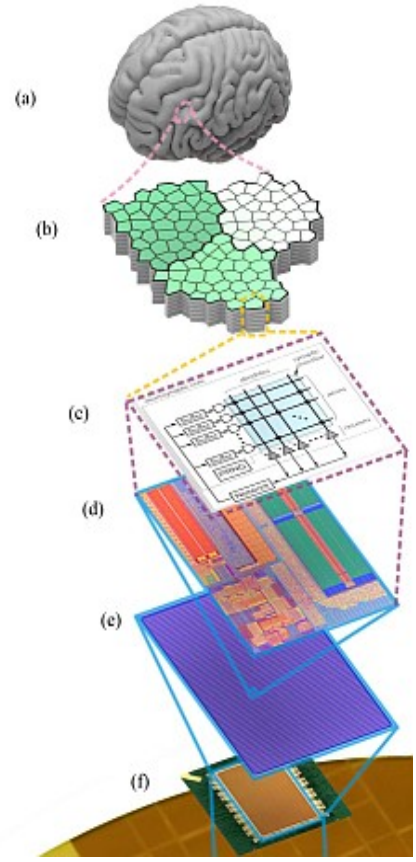
What are Neural Networks

To make the machines intelligent, scientists are trying to emulate the design and functioning of human brain and nervous system through neural networks. For years this was done with CPU programs that tried to emulate the brain. But even the very fastest CPUs were not fast enough to come close. Then along came GPUs. Most notable, ones from nVidia. The latest GPUs from nVidia are truly impressive. But it is still software programs trying to emulate the brain. What is needed is silicon circuitry that acts like the neurons in the brain.
To that end, IBM developed TrueNorth, a 65 mW real-Time neurosynaptic processor that implements a non-von Neumann, low-power, highly-parallel, scalable, and defect-Tolerant architecture. With 4096 neurosynaptic cores, the TrueNorth chip contains 1 million digital neurons and 256 million synapses tightly interconnected by an event-driven routing infrastructure.

Like human nervous systems, neural networks have nodes that connect with each other, and transmit and receive signals to and from other nodes. Thus far the emulation is correct, however it is not known accurately which neurons connect with which other neuron(s). So implementing neural connections for correct output is the biggest challenge of neural networks.

OUR REMARKABLE brain, structured with 100 billion parallel computational units (neurons) closely coupled to local memory (1000–10 000 synapses per neuron) and high fanout event-driven communication, attains exceptional energy efficiency (consuming only 20 W), while achieving unparalleled performance on perceptual and cognitive tasks. The brain's performance arises from its massive parallelism, operating at low-frequency (10 Hz average firing rate) and a low-power density of 10 mW/cm2 , in contrast to contemporary multi-Gigahertz processors with a power density of 100 W/cm2, or 10,000 times as much power usage.

The TrueNorth architecture , depicted in Fig. 1, is the result of approximating the structure and form of organic neuro-biology within the constraints of inorganic silicon technology. It is a platform for low-power, real-time execution of large-scale neural networks, such as state-of-the-art speech and visual object recognition algorithms. The TrueNorth chip, the latest achievement of the Defense Advanced Research Projects Agency (DARPA) SyNAPSE project, is composed of 4096 neurosynaptic cores tiled in a 2-D array, containing an aggregate of 1 million neurons and 256 million synapses. It attains a peak computational performance of 58 giga-synaptic operations per second (GSOPS) and computational energy efficiency of 400 GSOPS per Watt (GSOPS/W) [3]. We have deployed the TrueNorth chip in 1, 4, and 16-chip systems, as well as on a compact 2"×5" board for mobile applications.



The TrueNorth architecture is a radical departure from the conventional von Neumann architecture. Unlike von Neumann machines, we do not use sequential programs that map instructions into a linear memory. The TrueNorth architecture implements spiking neurons coupled together by the network connecting them. We program the chip by specifying the behavior of the neurons and the connectivity between them. Neurons communicate with each other by sending spikes. The communicated data may be encoded using the frequency, time, and spatial distribution of spikes.

A LITTLE HUMOR

In order for short shaggy dog stories too entertain, they rely on the reader's chagrin at mentally jumping to a conclusion, being misdirected, misled, word played, or an obtuse, and only vaguely related ending. So: ……
Why did the shaggy dog's owner think his shaggy dog was a great mathematician?
When he asked the shaggy dog what six minus six was, the dog said nothing.
What word did the shaggy dog always pronounce incorrectly? Incorrectly.
How do you keep a shaggy dog from barking in your front yard? Put him in your back yard.
How did the shaggy dog make gold soup? He put in 24 carrots.
When you catch your shaggy dog eating a dictionary, what should you do? Take the words right out of his mouth.
What dog can jump higher than a tree? Any dog can jump higher than a tree. Trees don't jump.
What time is it when five shaggy dogs are chasing a cat down the street? Five after one.
What place of business helps shaggy dogs that have lost their tail? A retail store.
What did the shaggy dog do at the flea circus? He stole the show.
How many hairs are in a shaggy dog's tail? None, They are all on the outside.
If your shaggy dog jumped into a swimming pool, what is the first thing he would do? Get wet.

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To All Members:

The line above your mailing address now shows your joindate. Please use your join month to choose when to renew your membership.

Dated Material – Please deliver ASAP

Membership Level ($)	1 Year	3 Years
Individual Member	35	90
Each Additional Family Member	15	40
Full-Time* Enrolled College Student	20	
Enrolled High School Student	15	
*Minimum 12 Semester Hours		
Business Member + Ad (Business Card)	25	
Business Member + Ad (¼ Page, ½ Page)	65,	100
Business Member + Ad (Full Page)	175	
Contributing Member	75	
Supporting Member	100	
Advocate Member	250	
Patron Member	500	

Directions to the NOCCC meeting location

apcug An International Association of Technology & Computer User Groups

Enter CA-55 N (Costa Mesa Freeway) crossing Interstate 5 toward Anaheim/Riverside for 9 miles. *Notice freeway and street signs stating "Chapman University."* Exit toward E Chapman Ave. Turn right onto N Tustin St. Turn left onto E Walnut Ave.

1) Turn left past N. Center St. for the **best place to park** in the underground parking structure (Lastinger under the sports field). Pay the small fee ($2) to park Ask members or help@noccc.org about parking details, restrictions, and our price break!

2) Turn left onto N Center St. On the right is the Hashinger Science Center, 346 N Center St. Orange California. Parking on the University side is free. Parking on the residential side is a city violation that may cost you a **tow away and a ticket!**