



range Bytes

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NOCCC meetings for Sunday February 2, 2025

MAIN MEETING

LLMs, AI Agents, RAG (??? See below)

By Jonathan Vergonio

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 129**

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

LLMs, AI Agents, RAG

As is true in a whole lot of different areas of human endeavors, saying the actual word description of a particular object, function, device, or whatever, is awkward. Hence, the abbreviations. Uvulopalatopharyngoplasty, or UPPP in the medical area that rivals the famous movie. To make life a little easier, I have copied Gemini's definition in the Editor's Corner starting on page 2.

Mr. Vergonio will enlighten us on these.

BOD.....3-4PM..... Science 129

3:00 PM – 4:00 PM

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
2025: Feb 2, Mar 2 Apr 6, May 4.

Coffee, cookies and donuts are available during the day in room 129 .

“Friends Helping Friends” since April 1976

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Special email addresses

Jim Sanders is: editor@noccc.org

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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 2024. That means that in October 2025 you should pay your membership dues. In the address label area of the Orange Bytes is your join month/expiration month.

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Editors Corner

LLMs

A "large language model" (LLM) is a type of artificial intelligence that uses deep learning techniques to understand and generate human language by being trained on massive amounts of text data, allowing it to perform tasks like translation, text summarization, question answering, and creative writing, all while mimicking natural human communication patterns; essentially, it's a complex computer program that can process and respond to language in a way similar to humans.

AI AGENT

An AI agent is a software program that uses artificial intelligence (AI) to perform tasks, answer questions, and make decisions. AI agents can be used to automate processes, solve complex problems, and improve accuracy and consistency.

Travel planning agents: Book flights, hotels, and reservations for dinner

RAG

In the context of computers, "RAG" stands for "Retrieval-Augmented Generation," which is a technique in natural lan-

guage processing (NLP) that improves the accuracy and relevance of AI-generated text by allowing a large language model (LLM) to access and incorporate information from external data sources like databases or knowledge bases before generating a response.

New CPU's, GPU's - from Intel, AMD, and Nvidia

CES 2025 had Intel and AMD announcing new CPU series, including the Intel Core Ultra 200 series and the AMD Ryzen 9000 series.

Intel Core Ultra 200 series

- Core Ultra 200HX series: Designed for enthusiasts
- Core Ultra 200H series: Designed for premium laptops
- Core Ultra 200U series: Designed for thin and light laptops

Processor Number	Processor Cores (P-cores + E-cores)*	Processor Threads	Intel® Smart Cache (LLC)	Max Turbo Frequency ³	Base Frequency	Graphics Max Frequency	Processor Graphics	Total PCIe Lanes, Thunderbolt™ Technology, Wi-Fi
				P-core	P-core			
Intel® Core™ Ultra 9 Processor 285HX	24 (8+16)	24	36 MB	Up to 5.5 GHz	Up to 2.8 GHz	Up to 2.0 GHz	Intel® Graphics	4 PCIe Gen 5 + 4 PCIe Gen 4 Lanes
Intel® Core™ Ultra 9 Processor 275HX	24 (8+16)	24	36 MB	Up to 5.4 GHz	Up to 2.7 GHz	Up to 1.9 GHz		2 Integrated Thunderbolt™ 4 Ports + Discrete Thunderbolt™ 5
Intel® Core™ Ultra 7 Processor 265HX	20 (8+12)	20	30 MB	Up to 5.3 GHz	Up to 2.6 GHz	Up to 1.9 GHz		Integrated Wi-Fi 6E + Discrete Wi-Fi 7 ²
Intel® Core™ Ultra 7 Processor 255HX	20 (8+12)	20	30 MB	Up to 5.2 GHz	Up to 2.4 GHz	Up to 1.85 GHz		
Intel® Core™ Ultra 5 Processor 245HX	14 (6+8)	14	24 MB	Up to 5.1 GHz	Up to 3.1 GHz	Up to 1.9 GHz		
Intel® Core™ Ultra 5 Processor 235HX	14 (6+8)	14	24 MB	Up to 5.1 GHz	Up to 2.9 GHz	Up to 1.8 GHz		

AMD Ryzen 9000 series

PROCESSOR MODEL	CORES/ THREADS	TYPICAL TDP	MAX/BASE FREQUENCY (UP TO)	TOTAL CACHE L2 + L3	PCIe GEN	UNLOCKED FOR OVERCLOCKING ²	COOLER INCLUDED	BUILT-IN AMD RADEON [™] GRAPHICS
AMD RYZEN [™] 9 9950X	16/32	170W	57/43 GHz	80 MB	5.0	Yes	No	Yes
AMD RYZEN [™] 9 9900X	12/24	120W	56/44 GHz	76 MB	5.0	Yes	No	Yes
AMD RYZEN [™] 7 9800X3D	8/16	120W	52/47 GHz	104 MB	5.0	Yes	No	Yes
AMD RYZEN [™] 7 9700X	8/16	65W	55/38 GHz	40 MB	5.0	Yes	No	Yes
AMD RYZEN [™] 5 9600X	6/12	65W	54/39 GHz	38 MB	5.0	Yes	No	Yes

Designed for gaming, creation, and more
Part of AMD's next-generation "Zen 5" processors

AMD also announced the following new CPU series: Ryzen AI 300 series processors for notebooks, Ryzen AI Max and Ryzen AI Max PRO Series Processors, Ryzen 9000 mobile processors, and AMD Ryzen Z2

The ongoing battle between Intel and AMD to be called the king of the hill, has been going on for years, arguably even decades. The CPU that sits at the top of the hill has been being traded back and forth between AMD and Intel. In the latest iterations of products from both companies, AMD is the undisputed king of gaming. It's best gaming CPU has a 20% to 30% better performance than the best that Intel has to offer. This is primarily due to the X3D's built in ram cache that is available on the AMD chip.

At \$480, the Ryzen 7 9800X3D is both the fastest gaming CPU on the market and a solid value in the high-performance category.

The AMD Ryzen 7 9800X3D has a total of 96MB of L3 cache. Key points about the 9800X3D L3 cache:

Large cache size:

This large cache size is a key feature of the X3D series, designed to improve gaming performance by storing more frequently accessed data closer to the CPU core.

3D V-Cache technology:

The 96MB cache is achieved through AMD's 3D V-Cache technology, which stacks an additional cache die on top of the core die.

Breakdown:

32MB of the L3 cache is on the core die itself, while the remaining 64MB comes from the stacked 3D V-Cache

As seen on the chart on the left intel's latest and greatest is the core ultra 9 processor 285 HX. This processor, after fixing some software controlled internal CPU operating configuration parameters, comes close to what AMD has to offer in the gaming arena. It exceeds what the AMD offering has in the productivity category of computing.

Meanwhile, Qualcomm with it's Snapdragon X Elite is snapping at the heels of both Intel and AMD

When comparing a Qualcomm Snapdragon X Elite to an Intel i7, the Snapdragon X Elite generally shines in battery life and power efficiency due to its ARM architecture, while the Intel i7 typically offers superior raw processing power, especially for demanding tasks like gaming or heavy video editing, making it better for performance-intensive workloads; however, the gap is narrowing with the latest Snapdragon X Elite chips which can rival some Intel i7s in certain scenarios, particularly in multi-core performance.

Key Differences:

Architecture:

Snapdragon X Elite uses ARM RISC architecture, known for better battery life, while Intel i7 uses x86 architecture, often prioritized for raw power.

Power Efficiency:

Snapdragon X Elite generally consumes less power than an Intel i7, leading to longer battery life on laptops.

Performance:

While the Snapdragon X Elite is catching up, an Intel i7 typically offers higher single-core performance, especially in demanding applications like high-end gaming.

NVIDIA announced the Geforce RTX 5090 at a mere \$1999.00.

A LITTLE HUMOR

It's the World Cup Final, and a man makes his way to his seat right next to the pitch. He sits down, noticing that the seat next to him is empty. He leans over and asks his neighbor if someone will be sitting there.

"No", says the neighbour. "The seat is empty."

"This is incredible", said the man. "Who in their right mind would have a seat like this for the Final and not use it?"

The neighbour says, "Well actually the seat belongs to me. I was supposed to come with my wife, but she passed away. This is the first World Cup Final we haven't been to together since we got married."

"Oh, I'm so sorry to hear that. That's terrible... But couldn't you find someone else, a friend, relative or even a neighbour to take her seat?"

The man shakes his head. "No", he says. "They're all at the funeral."

North Orange County Computer Club

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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



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!**