



range Bytes

Volume 50 No 2

February 2026

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NOCCC meetings for Sunday February 15, 2026

MAIN MEETING FOR February 15

Chapman Student Kevin Le

Will be talking on
Quantum Computing

Special Interest Groups (SIGs) & Main Meeting Schedule

9:00 AM – 10:30 AM

Beginners Digital Photography**Science 131**

Q and A about Digital Photography, need new leader

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 if requested

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

What is Quantum Computing?

Quantum computing is a revolutionary paradigm that leverages the counterintuitive principles of quantum mechanics to process information. Unlike classical computers that use binary bits (0 or 1), quantum systems utilize qubits. These units can exist in a superposition, representing multiple states simultaneously, which allows for massive parallel processing.

Through entanglement, qubits become intrinsically linked, enabling them to work in perfect synchronization. This capability allows quantum computers to solve complex problems in materials science, cryptography, and drug discovery that would take classical supercomputers millennia to complete.

BOD.....3-4PM..... 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
2026: Feb. 15, Mar. 1, Apr. 5, May 3

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

“Friends Helping Friends” since April 1976

Table of Contents

Main Meeting ___ 1

Special Interest Groups ___ 1

Again, verify your membership renewal information by checking your address label on the last page

Mark your calendars for these meeting dates	1
Contact information and email forwarding addresses	2
Editors Corner	2
Multi Agent AI	2
Quantum computing	3
A Little Humor	3
Directions and map	4

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

A thought to consider; The only reason the club has been able to continue functioning financially after Covid is a generous donation in the will of a former member. Could you do a small donation ?

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editor@noccc.org.

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Editors Corner



At the January meeting, Chapman student Tiffany Le explained what a multi-agent system (MAS) is, and talked about an example of a request that might be made to one

A multi-agent system (MAS) is a network of autonomous, interacting AI agents that work together—sometimes cooperatively, sometimes competitively—to solve problems too complex for a single system. These agents operate within a shared environment, each with its own capabilities, goals, and decision-making processes, enabling them to collectively handle large-scale or dynamic tasks.¹²³

A MAS typically includes:

Multiple autonomous agents Each agent can perceive its envi-

ronment, make decisions, and act independently.

Interaction and coordination Agents may collaborate, negotiate, or compete to achieve individual or shared goals.

A shared environment This can be physical (e.g., robots in a warehouse) or virtual (e.g., software agents managing data).

Emergent problem-solving MAS can solve complex or distributed problems that a single agent or monolithic system cannot handle efficiently.

Example of a Request You Might Make to a MAS

Here are a few realistic examples of what someone might ask a multi-agent system to do:

Example Request

“Coordinate a fleet of delivery drones to optimize same-day package delivery across Orange County.”

Why this fits MAS:

One agent might plan routes, another monitors weather, others control individual drones, and another handles traffic or airspace constraints.

Together, they adapt in real time to ensure efficient delivery.

Other Examples

“Manage energy distribution across a smart grid to reduce peak load.”

“Simulate traffic flow in North Tustin to optimize signal timing.”

“Monitor and rebalance a multi-robot warehouse picking system.”

Each of these tasks benefits from multiple specialized agents working in parallel.

Quantum Computing: Scaling Qubits Toward Real-World Breakthroughs

Quantum computing harnesses the strange rules of quantum mechanics to process information in ways impossible for classical computers. Classical bits are strictly 0 or 1, but **qubits** can exist in superposition—representing both states simultaneously. When qubits entangle, their states correlate instantly, enabling massive parallelism. Quantum interference then amplifies correct answers while canceling errors. This makes quantum systems potentially revolutionary for simulating quantum-scale phenomena, optimizing complex systems, factoring large numbers, and solving certain machine learning or cryptographic problems.

The field has progressed from theoretical concepts in the 1980s (notably Richard Feynman’s vision of quantum simulators) to noisy but functional hardware today. Current devices operate in the Noisy Intermediate-Scale Quantum (NISQ) era, limited by decoherence (loss of quantum states) and high error rates. Despite this, rapid advances in qubit count, fidelity, and error correction are building momentum toward practical utility.

One of the most striking recent milestones is the largest qubit array ever created. In 2025, Caltech physicists demonstrated a neutral-atom system trapping **6,100 cesium atoms** as qubits in a grid of optical tweezers—focused laser beams acting like microscopic pincers. This array achieved a record coherence time of about 13 seconds in superposition (nearly 10 times better than prior neutral-atom setups) and single-qubit manipulation fidelity of 99.98%. Researchers also showed they could shuttle atoms hundreds of micrometers while preserving quantum states, a key capability for scalable architectures and efficient quantum error

correction. This platform is not yet a fully programmable universal quantum computer—full entanglement for complex algorithms is the next major step—but it represents the current record for physical qubits in a single coherent array and offers a promising path to fault-tolerant machines with thousands or millions of logical qubits.

Other leaders emphasize different approaches. IBM’s superconducting processors (such as the Nighthawk at 120 qubits) and multi-chip designs target higher connectivity and deeper circuits, with 2026 roadmaps projecting systems in the thousands of qubits focused on logical performance. Neutral-atom platforms from companies like Atom Computing and QuEra similarly scale toward large arrays, while trapped-ion and photonic systems prioritize high-fidelity operations.

Have these machines solved real-life problems? As of early 2026, the honest answer is no—not in the sense of delivering broad, practical quantum advantage over classical supercomputers for commercially valuable tasks. Quantum computers have demonstrated solutions to small, contrived problems (e.g., factoring tiny numbers or simulating toy models) and shown early utility in hybrid quantum-classical workflows. D-Wave’s quantum annealers, for example, have simulated the quantum dynamics of magnetic materials too complex for direct classical simulation, realizing Feynman’s 1981 vision for quantum simulation of nature.

Experimental work has also touched materials science, small-molecule chemistry, and optimization problems in logistics or finance, but these remain proofs of concept or niche demonstrations rather than scalable solutions that outperform classical alternatives in real-world settings. Full advantage awaits better error correction and larger, more reliable systems.

The outlook is optimistic. With investments surging and roadmaps aiming for millions of qubits by 2030, quantum computing is poised to tackle pressing challenges: designing new drugs via accurate molecular simulations, discovering superior battery materials, optimizing global supply chains, and advancing fundamental physics. Quantum-resistant cryptography is already in development to counter future threats from Shor’s algorithm.

Quantum computing stands at an inflection point. The Caltech 6,100-qubit milestone and parallel progress across technologies signal that the era of useful quantum advantage may arrive within years, not decades. When it does, it could reshape industries and science alike.

A LITTLE HUMOR

John visited his 90-year-old grandpa, who lived way out in the country. On the first morning of the visit, John’s grandpa prepared a breakfast of bacon and eggs. John noticed a film-like substance on his plate and asked, “Are these plates clean?” His grandpa replied, “They’re as clean as cold water can get them. Just go ahead and finish your meal.” For lunch, Grandpa made hamburgers. Again, John was concerned about the plates, as his appeared to have specks of dried egg on it. “Are you sure these plates are clean?” he asked. Without looking up, Grandpa said, “I told you before, those dishes are as clean as cold water can get them!” Later, as John was leaving, his grandpa’s dog started to growl and wouldn’t let him pass. John said, “Grandpa, your dog won’t let me get by!” Grandpa turned to the dog and said, “Cold Water, go lie down!”

North Orange County Computer Club

**Dr. Donald Armstrong
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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
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*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!**