

Qolab 2025 Year-In-Review

Qolab's mission is to lead a semiconductor collaboration to build a commercially useful quantum computer. In 2025, the company laid the groundwork for this mission through technology development, strategic collaborations, and ecosystem engagement, including the deployment of its first cloud service. External visibility increased substantially, reinforced by the Nobel Prize in Physics awarded to Qolab's CTO, Prof. John Martinis.



Strategic Collaborations

Qolab strengthened its strategic position through strategic investments, partnerships and consortium leadership.

Announced March 2025



Transitioning superconducting qubit fabrication toward semiconductor-grade, wafer-scale manufacturing

Announced July 2025



Advancing qubit performance through improved metrology and fabrication

Announced November 2025



Co-leading full-stack co-design for deployable quantum-classical computing systems

Announced December 2025



Advancing qubit performance and reliability through nanofabrication and materials expertise

Government Programs

Qolab contributed to national quantum initiatives, supporting shared infrastructure, benchmarking efforts, and long-term technology development.

Announced April 2025



Leading superconducting quantum hardware development within a national benchmarking consortium with HPE, Synopsys, Quantum Machines, 1Qbit, and University of Wisconsin

Announced November 2025



Contributing fabrication tooling and performance benchmarking for scalable superconducting qubits

Product Launch

This year, Qolab launched Qolab Start, a superconducting qubit system for hardware research and workforce development, and deployed its first superconducting-qubit devices at the Israeli Quantum Computing Center (IQCC). Early users include Rensselaer Polytechnic Institute and the University of Wisconsin–Madison.



Photo Credit: Quantum Machines

Scientific Publications

Qolab published the paper *Scaffold-Assisted Window Junctions for Superconducting Qubit Fabrication*, introducing a lift-off-free Josephson junction process compatible with semiconductor manufacturing. The company also published *Statistics of Strongly Coupled Defects in Superconducting Qubits*, demonstrating that lift-off is a major source of decoherence.

Scaffold-Assisted Window Junctions for Superconducting Qubit Fabrication

Chung-Ting Ke*,^{1,2} Jun-Yi Tsai*,¹ Yen-Chun Chen*,² Zhen-Wei, Xu,² Elam Blackwell,³ Matthew A. Snyder,³ Spencer Weeden,³ Peng-Sheng Chen,⁴ Chih-Ming Lai,⁴ Shyh-Shyuan Sheu,⁴ Zihao Yang,⁵ Cen-Shawn Wu,^{6,2} Alan Ho,⁷ R. McDermott,^{7,3,a)} John Martinis,^{7,8,b)} and Chii-Dong Chen^{1,2,c)}

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(Dated: 17 March 2025)

The superconducting qubit is one of the promising directions in realizing fault-tolerant quantum computing (FTQC), which requires many high-quality qubits. To achieve this, it is desirable to leverage modern semiconductor industry technology to ensure quality, uniformity, and reproducibility. However, conventional Josephson junction fabrication relies mainly on resist-assisted double-angle evaporation, posing integration challenges. Here, we demonstrate a lift-off-free qubit fabrication that integrates seamlessly with existing industrial technologies. This method employs a silicon

Industry Engagement

Middle East Tour

Qolab leadership conducted a Middle East tour spanning the UAE and Israel, including keynotes, technical sessions, and academic lectures with industry, government, and university partners. Engagements included visits to CyberQ, NYU Abu Dhabi (ADIA Lab), TII Quantum Labs, Tel Aviv University, Hebrew University of Jerusalem, and technical discussions with Quantum Machines and regional research organizations.



Photo credit: Quantum Machines

Industry Conferences

Qolab participated in major industry and scientific conferences, including APS (Anaheim), IEEE Quantum Week (Albuquerque), and AQC (Boston). The Qolab's APS talk was one of the most popular talks of the conference. At multiple events, the team delivered live, real-time demonstrations of Qolab superconducting qubits, enabling hands-on calibration experiments using Quantum Machines' control stack.



Photo credit: Quantum Machines

Academic Outreach

Qolab researchers presented technical talks and participated in panels and seminars at leading institutions, including Fermilab, the Institute for Quantum Computing (IQC), and the University of Wisconsin–Madison. These engagements supported workforce development, academic collaboration, and broader dissemination of Qolab's hardware and fabrication advances.



Photo credit: UC Santa Barbara, Jeff Liang

Media Visibility

Following the 2025 Nobel Prize in Physics awarded to CTO Prof. John Martinis, Qolab saw increased U.S. and international media attention, with coverage linking the award to the company's work in superconducting quantum hardware.

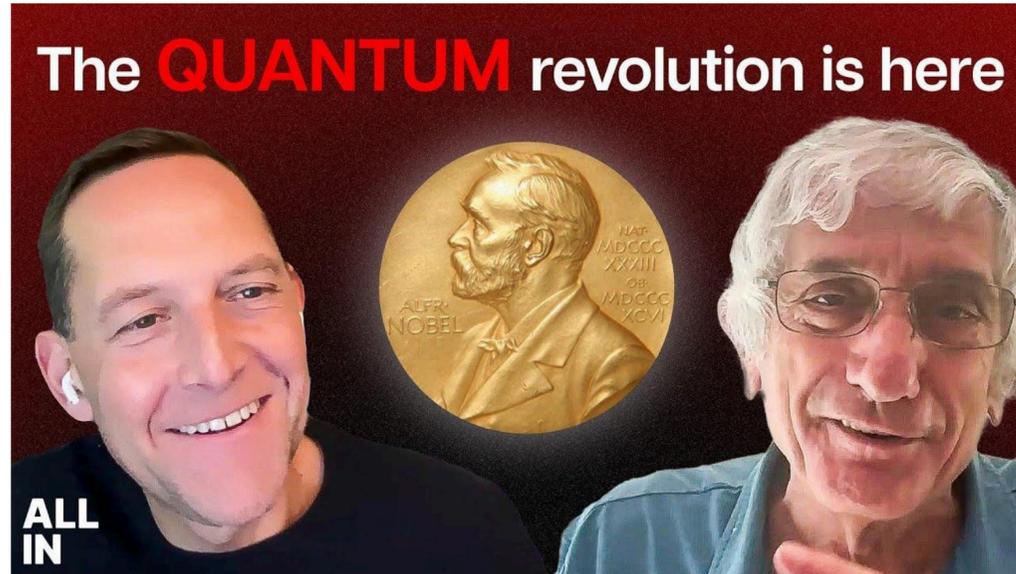


Photo credit: Nobel Prize Outreach AB / [NobelPrize.org](https://www.nobelprize.org)

SCIENCE

Nobel Prize in Physics Awarded to Trio of Researchers for Work in Quantum Mechanics

John Clarke, Michel H. Devoret and John M. Martinis share the 2025 award

By [Aylin Woodward](#) [Follow](#)

Updated Oct. 7, 2025 12:23 pm ET

THE WALL STREET JOURNAL

SCIENCE & MEDICINE

California physicist and Nobel laureate John Martinis won't quit on quantum computers

Los Angeles Times

By [Sandra McDonald](#)
Staff Writer | [Follow](#)

Oct. 9, 2025 2:01 PM PT

Nobel Prize in Physics Is Awarded for Work in Quantum Mechanics

John Clarke, Michel H. Devoret and John M. Martinis were recognized for work that made behaviors of the subatomic realm observable at a larger scale.

The New York Times

By [Katrina Miller](#) and [Ali Watkins](#)

Oct. 7, 2025

Appendix – Media & Announcements

Media Coverage

The New York Times: [Nobel Prize in Physics Is Awarded for Work in Quantum Mechanics](#)

Financial Times: [Quantum computing needs its own industrial revolution](#)

Associated Press: [Three scientists at US universities win Nobel Prize in physics for advancing quantum technology](#)

Bloomberg: [Nobel Winner Warns China Is “Nanoseconds Behind” in Quantum Race](#)

The Washington Post: [John Clarke, Michel Devoret, John Martinis win physics Nobel Prize](#)

CNN: [Nobel Prize in physics goes to John Clarke, Michel H. Devoret and John M. Martinis for revealing “bizarre properties” of the quantum world](#)

NBC News: [Nobel physics prize awarded to U.S.-based trio for discoveries in quantum mechanics](#)

Nature: [Physics Nobel goes to quantum-computing pioneers](#)

Los Angeles Times: [California physicist and Nobel laureate John Martinis won't quit on quantum computers](#)

All-In Podcast: [Nobel Prize in Physics Winner: The Quantum Leap That Changed Everything – John Martinis](#)

Physics World: [John Clarke, Michel Devoret and John Martinis win the 2025 Nobel Prize for Physics](#)

Times Higher Education: [Quantum scientists awarded 2025 physics Nobel for 80s breakthrough](#)

The Quantum Insider: [Quantum Progress Demands Manufacturing Revolution, Martinis Says](#)

The Quantum Insider: [Qolab Deploys First Superconducting Qubit Devices at the IQCC](#)

IBM Think: [Nobel Prize winner John Martinis: Making quantum physics visible](#)

Applied Materials: [A Quantum Leap: Celebrating Dr. John Martinis and the Future of Computing](#)

CTech / Calcalist: [Inside the mind of a Nobel physicist: John Martinis on the future of quantum computing](#)

Along with coverage from additional international, scientific, and industry media.

Press Releases

March 2025: [Qolab Secures Investment from Applied Ventures and Announces Collaboration to Advance Quantum Computing Manufacturing](#)

April 2025: [Qolab Spearheads Hardware Development for DARPA's Quantum Benchmarking Initiative](#)

October 2025: [Qolab Cofounder and CTO John M. Martinis Awarded 2025 Nobel Prize in Physics](#)

November 2025: [HPE and partners launch Quantum Scaling Alliance to accelerate quantum computing breakthroughs \(co-led by Qolab CTO\)](#)

November 2025: [DOE announces renewed funding for Quantum Systems Accelerator](#)

December 2025: [Qolab deploys first superconducting-qubit devices at the IQCC to accelerate international collaboration in quantum computing](#)

December 2025: [Qolab Secures Strategic Investment from Western Digital to Accelerate the Next Wave of Quantum Innovation](#)