二零二五 THE KTI VIBE

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Gratitude

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Author: Zhiyu Wen

Gratitude

Gratitude—for Nature
for the rain that moistens every seed,
for the wind that whispers across the fields,
for the moon that changes the season,
for the sunlight that awakens the earth.

Gratitude—for Surroundings
for the streets that carry stories of life,
for the park where laughter echoes free,
for the school where dreams take flight,
for the home that shelters every heart.

Gratitude—for Family
for the hands that cook with love,
for the voices that comfort in silence,
for the smiles that make pain disappear,
for the hearts that always understand.

Gratitude—for Society
for the teachers who guide our way,
for the doctors who save our lives,
for the workers who build our cities,
for the volunteers who help people in need.

Gratitude—for Everything
for the joy that lifts us, the tears that shape us,
for every beginning, every ending,
for this shared moment of being and belonging,
for the readers who are reading this poem.

https://easy-peasy.ai/ai-image-generator/images/tranquil-field-of-appreciation-embracing-gratitude

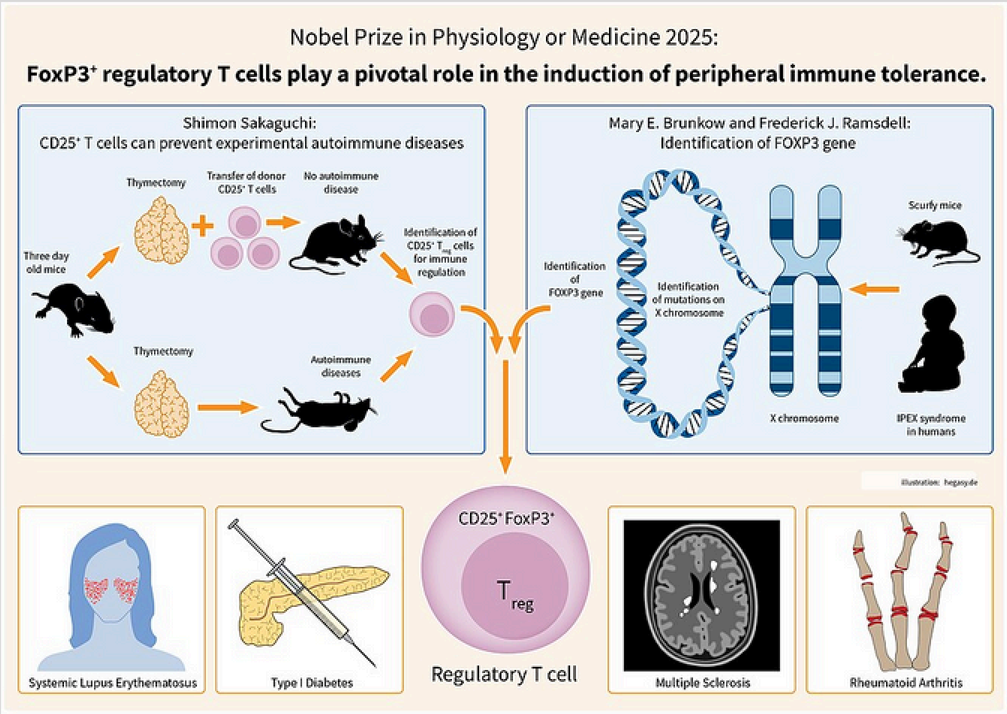
Author: Zhiyu Wen

The 2025 Nobel Prizes Discovery

In October 2025, the Nobel Prizes were just announced. This year's winners are like a powerful mirror, reflecting both the progress and the pain of our world. Scientists were uncovering the secrets of the immune system and pushing the boundaries of quantum physics; writers were tackling the chaos of modern life; and activists were standing up for democracy. As a high school student preparing for college, I don't view these as distant, untouchable achievements. Instead, they show me exactly what our generation must learn. Their work proves that pursuing truth and justice is the most valuable for us.

The 2025 Nobel Prize in Physiology or Medicine was awarded to Mary E. Brunkow, Fred Ramsdell, and Shimon Sakaguchi, who discovered how the immune system is regulated.

Their work on regulatory T cells and the FoxP3 gene teaches more than biology. The body's powerful immune system must be regulated, or it may attack our own organs.



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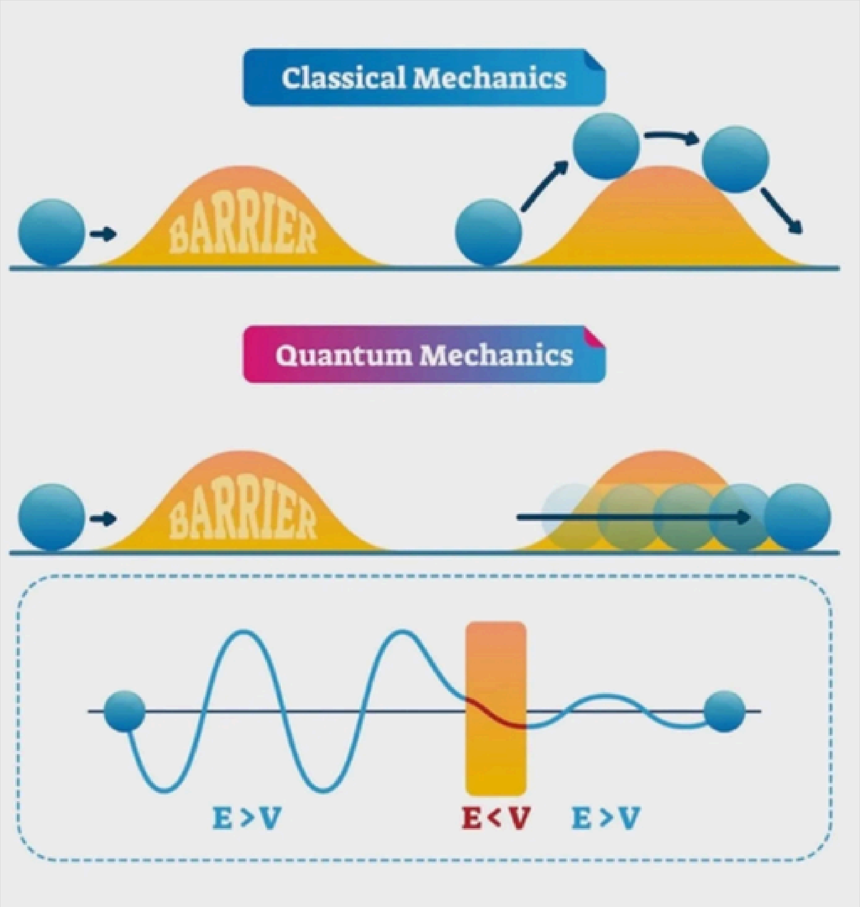
The groundbreaking discoveries concern peripheral immune tolerance, which prevents the immune system from harming the body. They have laid the groundwork for a new field of research and spurred the development of innovative treatments, including those for cancer and autoimmune diseases.

Author: Zhiyu Wen

The Physics Prize was awarded to John Clarke, Michel Devoret, and John Martinis, who investigated quantum tunneling and discovered that quantum behavior can persist in circuits large enough to be physically manipulated. Before their discoveries, we had researched quantum in the micro world; we needed massive and costly instruments to explore how quantum works. Now we can even touch it, as the prize-winners conducted experiments with an electrical circuit in which they demonstrated both quantum mechanical tunneling and quantized energy levels in a system large enough to be held in the hand.

When I read about this, I thought of my own fascination with computer science, because their new findings provided opportunities for developing the next generation of quantum technology, including quantum cryptography, quantum computers, and quantum sensors.



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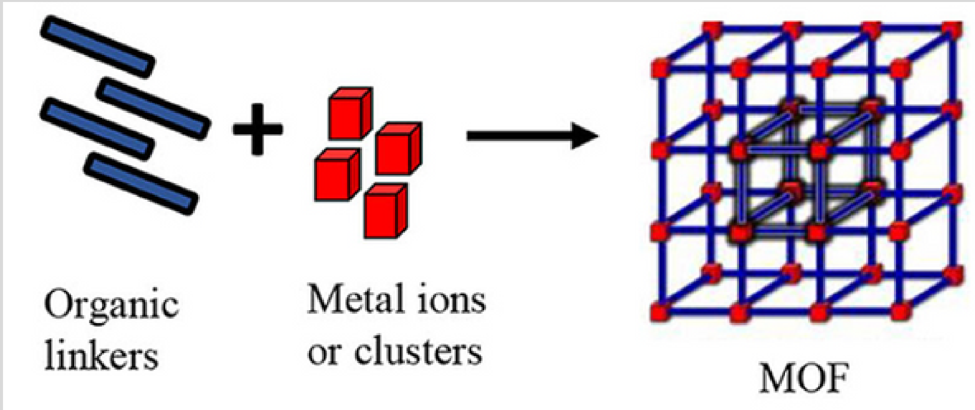
In Chemistry, Susumu Kitagawa, Richard Robson, and Omar Yaghi were awarded for creating metal-organic frameworks (MOFs). MOFs have large spaces through which gases and other chemicals can flow, allowing them to be used for harvesting water from desert air, capturing carbon dioxide, storing toxic gases, or catalyzing chemical reactions. As someone passionate about environmental science, I found this discovery inspiring. It reminded me that sustainability is not just a moral ideal; it’s a material challenge that demands innovation from both scientists and citizens.

Author: Zhiyu Wen

The Literature Prize went to László Krasznahorkai, a Hungarian novelist, for his compelling and visionary oeuvre that, in the midst of apocalyptic terror, reaffirms the power of art.

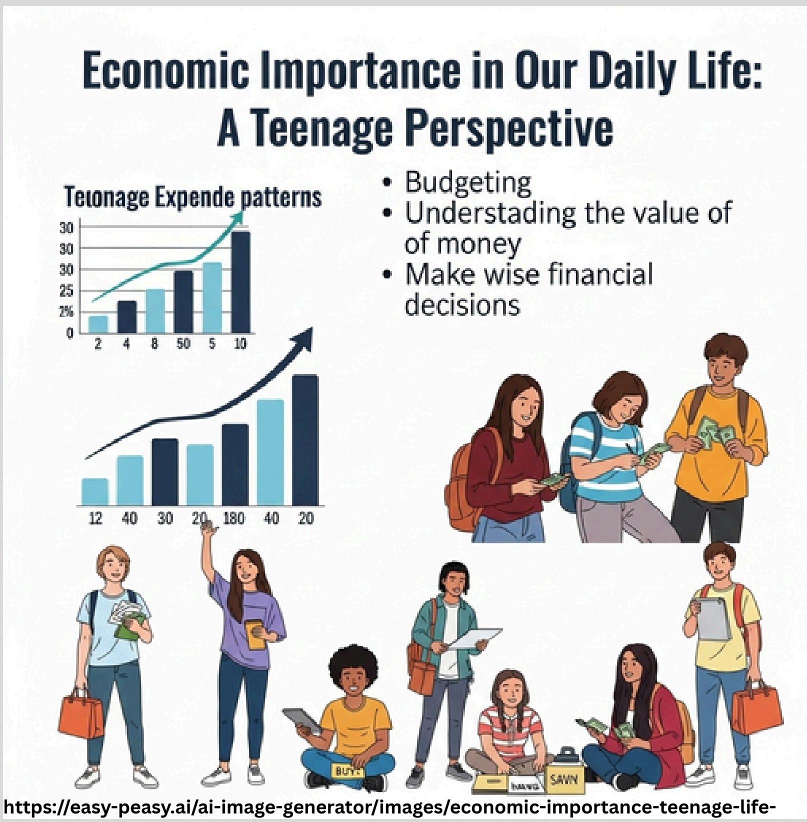
Reading about his work made me think of how literature, like technology, reshapes our perception of the world.



https://commons.wikimedia.org/wiki/File:General_structure_of_Metal-organic_frameworks.png

The Nobel Peace Prize was awarded to Venezuelan activist María Corina Machado, a brave and committed champion of peace. As the leader of the democracy movement in Venezuela, she is one of the most extraordinary examples of civilian courage in Latin America in recent times. Her story reminded me of why leadership matters even when success seems impossible.

Finally, the Economics Prize was awarded to Joel Mokyr, Philippe Aghion, and Peter Howitt for demonstrating how new technology can drive sustained economic growth. Over the last two centuries, for the first time in history, the world has seen sustained economic growth. This has lifted vast numbers of people out of poverty and laid the foundation of our prosperity.



https://easy-peasy.ai/ai-image-generator/images/economic-importance-teenage-life-budgeting-wise-decisions

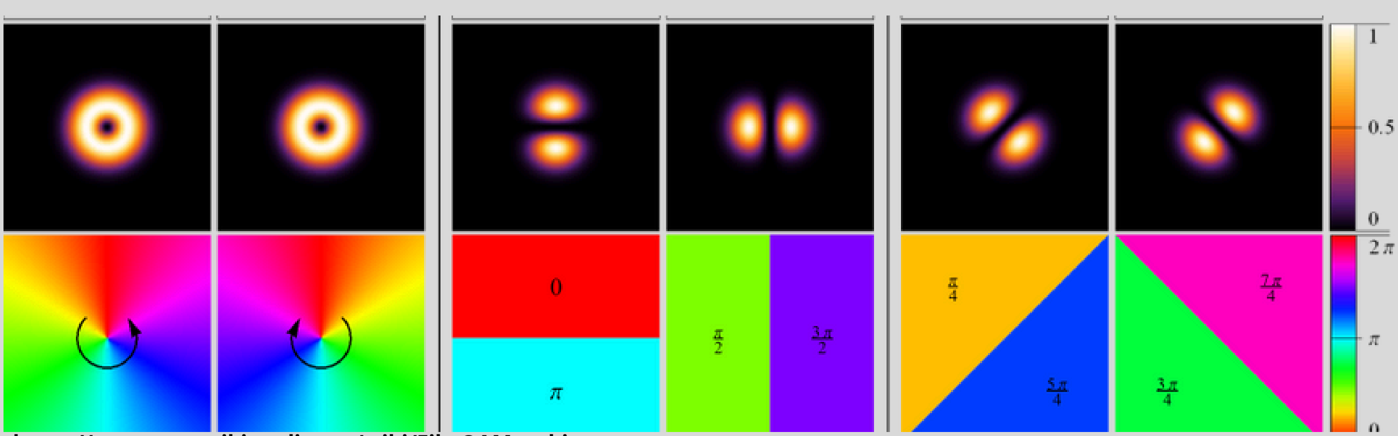
The world we are about to enter, marked by AI, climate change, and political tension, demands exactly that combination. It requires scientists who understand society, and citizens who understand science. That's why the Nobel Prizes matter to students like me: they show that learning, when driven by purpose, can still change the world.

Author: Zhiyu Wen

Quantum Computing

The 2025 Nobel Prize in Physics once again attracted the world's attention to the mysterious quantum world. This year's laureates were recognized for groundbreaking experiments in quantum tunneling, demonstrating that quantum behavior can exist in circuits large enough to be physically touched. Their discoveries extend far beyond theory, but they provide us with a chance to apply quantum principles in the real world, pointing directly toward the future of quantum computing, which may be the foundation of the next generation of computers. Just as humanity once learned to control fire and later electricity, we are now beginning to control quantum states themselves. And that power could have a profound impact on the future of computation, communication, and even intelligence.

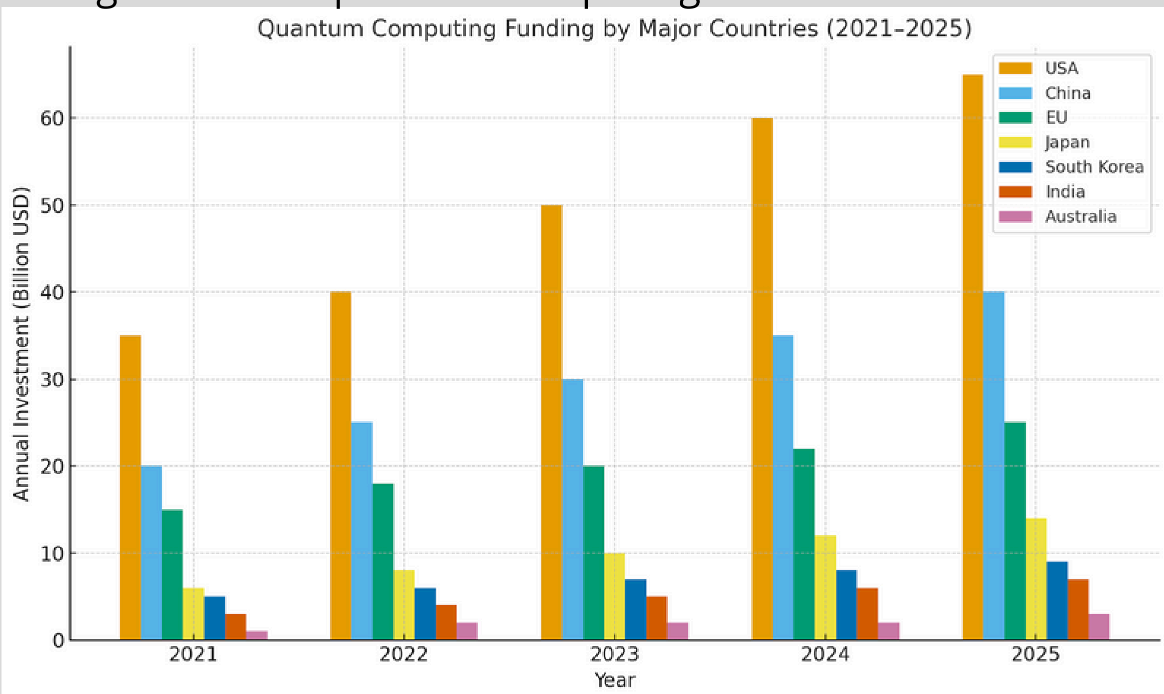
Our current computer system performs calculations in binary, which means there are only two states: 0 and 1. This requires only one transistor to indicate these two states: on is represented by 1, and off is represented by 0. However, a quantum computer works with quantum bits, or qubits, which can be both 0 and 1 simultaneously. It sounds like science fiction, but it's real. Scientists name this phenomenon as superposition. Imagine we throw a coin, before it lands, it's both heads and tails. A qubit works like a coin; until we measure it, it exists in many states at once. Due to this, a quantum computer can perform certain types of calculations at an unimaginably fast speed. Another fantastic thing is entanglement, which connects qubits so strongly that changing one instantly affects the other, even across great distances. We may use it for parallel calculations and cybersecurity.



https://commons.wikimedia.org/wiki/File:OAM_qubit.svg

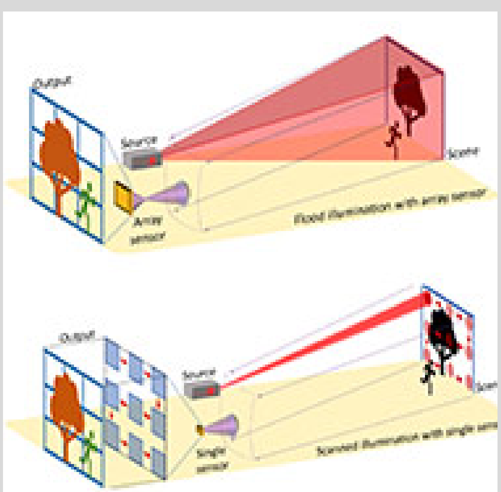
Author: Zhiyu Wen

Quantum computing offers capabilities that surpass those of classical computers. By leveraging superposition and entanglement, quantum processors can process vast amounts of data simultaneously, unlocking breakthroughs across multiple scientific and industrial frontiers, including Artificial Intelligence, drug discovery, materials science, Cybersecurity, and Climate Modeling. Because of these potentials, countries around the world are racing to master quantum computing.



According to the bar chart above, global investment in quantum computing has accelerated significantly over the past five years. From government initiatives to corporate breakthroughs, nations are competing to dominate a field that could redefine computing, encryption, and artificial intelligence. According to recent estimates, the United States, China, and the European Union collectively account for more than two-thirds of global quantum research spending. It is a clear sign that quantum computing has moved from theory to a top-tier strategic priority.

The U.S. has invested between $3.5 billion and over $6.5 billion each year, and it remains the global leader in both funding and ecosystem development. IBM’s Condor chip reached 1,121 qubits in 2024, and Google demonstrated scalable error correction.



https://opg.optica.org/optica/fulltext.cfm?uri=optica-10-9-1124

China’s investment has grown rapidly too, rising from $2 billion to $4 billion annually. After spending over $15 billion in national programs, China has made remarkable progress in quantum communication and photonic processors. The *Zu Chongzhi 3* photonic system and the *Micius* quantum-communication satellite show China’s strategy: building full-stack capabilities that integrate computing, sensing, and secure communication.

The EU’s funding has increased from $1.5 billion to $2.5 billion. It initiated the Quantum Flagship program and established new Quantum Competence Clusters to facilitate the EU's transition from research to industry. Companies like IQM Finland and Pasqal France are pioneering scalable superconducting and neutral-atom architectures.

https://opg.optica.org/opticaq/fulltext.cfm?uri=opticaq-1-1-35&id=541175

Japan’s consistent investment, now around $1.4 billion annually, focuses on quantum materials and cryogenic systems. Toshiba and Riken lead efforts in optical qubits and quantum cryptography. South Korea, which has grown from $500 million to nearly $900 million, focuses on semiconductor-based qubits and national cloud access through firms such as SK Telecom and the Samsung Advanced Institute of Technology.

India’s National Quantum Mission aims to develop domestic capabilities in quantum computing and communication by 2030, supported by companies such as Tata Quantum and QNu Labs. Australia, although smaller in scale, plays a disproportionately large role in quantum hardware. Silicon Quantum Computing (SQC) and UNSW Sydney are world leaders in silicon-based qubits, proving that innovation can thrive beyond major powers.

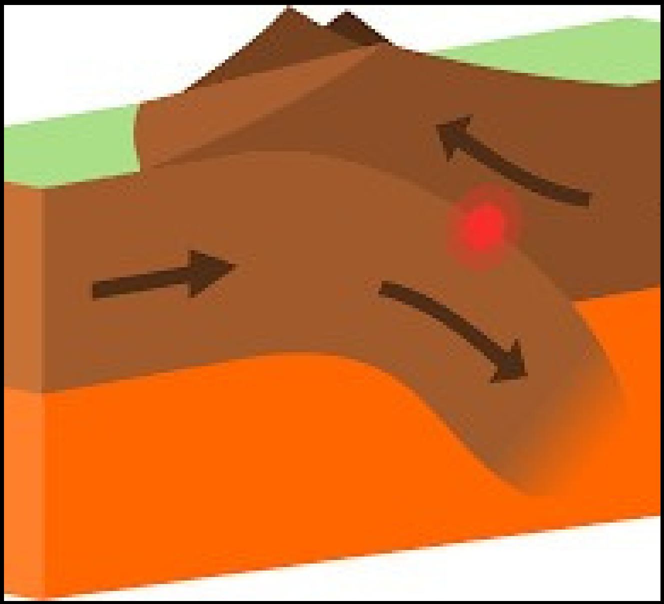
For high school students, this new era emphasizes the importance of studying physics, mathematics, computer science, and engineering. The next breakthroughs in AI, clean energy, and cybersecurity may come from young minds like ours. The global quantum race isn’t just about governments, but it’s an open invitation for our generation to join the quest for knowledge.

Author: Zhiyu Wen

Understanding Earthquakes

In 1912, a German scientist named Alfred Wegener proposed that all the continents we see today were once joined together in a single, vast landmass known as Pangaea. He saw how the coastline fit together like puzzle pieces and found identical fossils on continents separated by vast oceans. His theory of continental drift was initially dismissed.

In the 1950s, Marie Tharp mapped the seabed and discovered a massive underwater mountain range known as the Mid-Atlantic Ridge. Her detailed maps revealed a central rift valley, indicating that the seafloor was spreading. These were the missing pieces of the puzzle that led to the Theory of Plate Tectonics.



Author: Zhiyu Wen

A History of Big Shakes

Humans have been experiencing earthquakes for as long as we have existed. Before science, people made up stories to explain the terrifying shaking. San Francisco 1906: A massive quake and the fires that followed destroyed most of the city. It was one of the first disasters captured on camera, showing the world the true power of nature. Chile 1960: The biggest earthquake ever recorded (a 9.5 magnitude). It was so powerful that it caused tsunamis that traveled all the way across the Pacific Ocean to Japan.

The dangers are not just the shaking.

The ground shaking is the first thing you notice, but the dangers don’t stop there. Here’s what makes big earthquakes so destructive: Falling buildings: This is the first and most significant danger. The shaking can cause buildings, bridges, and overpasses to collapse. Landslides: The tremors can shake loose rock and soil on hills, causing them to slide down and bury everything in their path. Fires: Shaking breaks gas lines and knocks down power lines. This combination can start fires and spread quickly through a damaged neighborhood. Tsunamis: If a powerful earthquake occurs beneath the ocean, it can generate a massive wall of water, creating a giant wave known as a tsunami that can devastate coastal areas.

Author: Zhiyu Wen

How to stay safe

Before it happens

Build a kit: Assemble an emergency bag with essentials like Water and non-perishable food for 3 days, a flashlight, a battery-powered radio, a First aid kit and medicine, a whistle to signal for help, Sturdy shoes, and a mask.

During the shaking

Drop to the floor. Cover your head and neck by getting under a strong table or desk. Hold on to the leg of the table or desk so it doesn't move away from you. Inside: Stay inside, drop, cover, and hold. Stay away from windows. Outside: Get to an open area, away from buildings, trees, and power lines. In a car: Pull over, stop the vehicle, and stay inside with your seatbelt on

After it stops

See if you or anyone around you is hurt. Be cautious of broken glass, fallen power lines, and damaged walls. If you smell gas, exit the area immediately. More minor earthquakes, called aftershocks, often follow the main one. Gett ready to drop, cover, and hold on again. Listen to the official news update on the radio for instructions.

Earthquakes serve as a poignant reminder that our planet is constantly in motion and changing. They build mountains and shape continents. By understanding them and, most importantly, by being prepared, we can live safely on our incredible earth.

Author: Tianhe Si

Social Media

In an ideal world, social media will become a positive tool that connects people and inspires potential, just like a learning group in a community, where members share, help each other, and work together to overcome difficulties.

If this positive impact can be spread to a wider level through social media, it will bring far-reaching changes. The advantage of social media lies in its information dissemination and connectivity. It can bring people from different regions together to form a learning group, interest community, and become a positive energy network.

https://www.wearetribu.com/blog/3-simple-strategies-to-boost-your-social-media-copy

But in reality, there are problems such as information overflow, cyber violence, and distraction in social networks, which may have a negative impact on social relationships and personal psychology.

If social media can really benefit mankind, then we need to improve users' media literacy, and the platform should optimize the recommendation mechanism to encourage the dissemination of beneficial and valuable content.


https://freesvg.org/social-media-tree

At the same time, individuals should use social media with a goal, making social platforms a tool for learning, sharing and growth. Social media has both potential and hidden dangers. The key lies in how we use it. If it is well guided, it can become an important force to promote personal development and social progress.

Author: Grace

Golden Pumpkin Toast & Little Pumpkin Buns
金黄南瓜吐司与小南瓜面包

This autumn, let's bring the season's golden warmth to the table. So, let's begin with this versatile pumpkin dough
秋意渐浓，正是为餐桌添一抹暖金色的好时节。那么我们就从这款百搭的南瓜面团开始吧

Part 1: The Dough (面团部分)

- 普通面粉 All-Purpose Flour450 g
- 高筋面粉 Bread Flour 40 g *(For better texture & structure / 提升筋性与口感)*
- 南瓜泥 Pumpkin Purée 100 g
- 酵母 Yeast 9 g
- 盐 Salt 9 g
- 鸡蛋 Eggs 2
- 牛奶 Milk 150 g *(Warm to approx. 95°F/35°C / 温热至约(95°F/35°C)*
- 黄油 Butter 50 g *(Softened at room temperature / 室温软化)*

Part 2: The Pumpkin Filling (南瓜馅料)

- 南瓜泥 Pumpkin Purée 300 g
- 糖 Sugar 30 g
- 黄油 Butter 15 g
- 盐 Salt 3 g

Method (制作方法): Sauté all filling ingredients over low heat until slightly thickened and combined. Let it cool completely before use.
将所有馅料用小火炒匀至略微浓稠，完全冷却后备用。

Part 3: The Method (制作步骤)

1. **Combine (混合):**

In a large bowl, mix the flours, yeast, and salt (keep salt and yeast separate). Add the wet ingredients: eggs, warm milk, and pumpkin purée. Mix until a shaggy dough forms.
在碗中混合面粉、酵母和盐（盐与酵母分开放）。加入鸡蛋、温牛奶和南瓜泥等湿性材料，搅拌成团。

2. Knead (揉面):

Knead the dough until it's mostly smooth. Add the softened butter and continue kneading until the dough is elastic and can pass the windowpane test (can be stretched into a thin, translucent membrane).
揉面至基本光滑后，加入软化的黄油。继续揉至面团能拉出坚韧的薄膜（即“手套膜”）。

3. First Proof (基础发酵):

lace the dough in a warm spot, cover, and let it rise until doubled in size (approx. 60–90 minutes).
将面团置于温暖处，发酵至两倍大（约需60–90分钟）。

4. Shape & Decorate (整形与装饰):

For the Toast Loaf (吐司整形): Divide the dough into 3 equal portions. Roll each out, spread with pumpkin filling, roll up tightly, and place the three rolls into the loaf pan. Generously sprinkle the top with pumpkin seeds.
将面团分成三等份，擀开后涂抹南瓜馅，卷起，将三个面卷并排放入吐司模具中。在表面撒满南瓜子作为装饰

Author: Grace

For the Little Pumpkin Buns (小南瓜面包整形): Divide the dough into 6 small portions. Wrap each with pumpkin filling and seal tightly.To create the pumpkin shape, you can use kitchen twine to gently tie the roll or use a scraper/the back of a knife to cut lines into the surface. Garnish the center of each bun with a pinch of black sesame seeds.
将面团分成六小份，包入南瓜馅，收紧收口。可用棉线在面团上轻轻捆扎出南瓜造型，或用刮板/刀背割出纹路。最后在每个面包中心撒上少许黑芝麻点缀。

5. Second Proof (二次发酵):

Let the shaped dough rise again in a warm place until it has increased in size by about 50% and feels puffy.
将整形好的面团进行二次发酵，直至体积增长约1.5倍。

Part 4: Baking & Finishing Touches (烘烤与最后步骤)

For the Toast Loaf (吐司)

- Oven Temp (烤箱温度): 360°F（180°C）
- Baking Time (烘烤时间): 35 minutes
- Key Tip (关键技巧): Brush with egg white (not whole egg) before baking for a lighter golden color. Cover with foil after the first 10 minutes to prevent the top from over-browning.

烤前刷蛋清以防颜色过深。烘烤10分钟后，在顶部加盖锡纸

For the Little Pumpkin Buns (小南瓜面包)

- Oven Temp (烤箱温度): 370°F（185°C）
- Baking Time (烘烤时间): 13 minutes
- Key Tip (关键技巧): Also brush with egg white. Cover with foil after about 8 minutes to ensure an even, beautiful color.

同样建议刷蛋清。烘烤约8分钟后加盖锡纸，以获得均匀漂亮的上色

Keys to Success / 成功关键

The Windowpane Test is Key (手套膜是关键): Proper kneading is the foundation of a soft bread. Don't stop until you can stretch the dough thinly without it tearing easily.
充分的揉捏是面包柔软的基石。确保你的面团能拉出不易破裂的薄膜。

Pumpkin Purée Varies (南瓜泥的差异): The moisture content of pumpkin purée can differ. If your dough feels too sticky, add a tablespoon of flour at a time. If too dry, add a splash of milk.
不同南瓜泥的含水量有别。如果面团太湿黏，可少量多次地加入面粉；如果太干，则可加入少许牛奶调整。

Don't Rush the Proofing (发酵需要耐心): Fermentation develops flavor and texture. Be patient and let the yeast do its work. The "double in size" rule is more important than the clock.
发酵是风味与口感形成的过程，请给予足够的时间与耐心。“发至两倍大”的视觉判断比严格计时更重要。

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