CCST9077 Final Project Chui Cheuk Yu Heidi [redacted]

POEM

The Quantum Love Definition ♥

By Chui Cheuk Yu Heidi

Quantum physics is a mysterious field.
To understand without panic, follow my lead.
No.1, quantum info is a non-classical existence.
It shall not be thought with an ordinary appearance.
Quantum info are stored in qubits.
A lil particle with more vastness than you can imagine.
Think of qubit as a gin and tonic shots.
Is the taste in your mouth gin tonic or both, I reckon?
Pondering you must be, of this quantum complexity.
How can something be both? Why
yes. A qubit is both 0 and 1 by
quantum superposition. This is the quantum, way about.
Imagine it, as asking your crush out.
Would it be a yes, or would I get a no?
The answer can be both y'know.

There is more to quantum mechanics,
very much like our love dynamics.
Quantum entanglement is one such phenomenon.
One proton can link up with another proton
even if they're light years away, or universes apart.
The connection between us is the same, sweetheart.
Two entangled p correlate the other's state,
just like how we mediate each other's fate.
The unspeakable chemistry between we and us,
As if we become one system, one equation we must.
Entanglement works with no interaction,
like how you knew my thoughts with no hesitation.
If one is North, then the other is South.
One cannot work without one another's help.

Einstein might think that's spooky
but you, are still my sweet cutey.
So babe, give me your phone number,
in a quantum-encrypted manner.
Hey honey, let us plan our next date.
Take out the qubit,
And collapse it to a defined state.
It's a one-bit bid, but
let's hope it gives a great date pick
or I will surely have a kick
over who(what) governs this quantum trick.

Commented [HC1]: Metaphor for superposition states of qubits; gin and tonic is equivalent to 0 and 1

Commented [HC2]: Metaphor for superposition; referenced from lecture slides

Commented [HC3]: Metaphor for entanglement; how entangled particles affect each other and work as one system

Commented [HC4R3]: It is also a small jest on the EPR theory (which believes the entangled state is pre-determine through local hidden variables within the particle)

Commented [HC5]: The qubit here is presented as a lucky-draw device to help the narrator determine a date choice

Commented [HC6]: Referring to the fact that the one bit of info obtained from a collapsed qubit is random

Commented [HC7]: A remark on the fact that what actually controls these quantum property is still unknown

The explanation for quantum is still expanding,
but our love is certain with no misunderstanding.
Quantum mechanics may be largely unknown,
but I know that I'm thrown deeply into your-monde.
So let's discover our quantum love fate,
amongst the qubit's infinite state.

Commented [HC8]: Another remark on the infinite probabilities made possible through a qubit

POEM EXPLANATION

For this final project, I have decided to provide a simple explanation for quantum information and mechanics through writing a love poem. This original poem has four stanzas with an irregular structure and rhyming scheme to illustrate the complexity and versatility of quantum information. Through various poetic devices and structure, I attempted to visualize quantum information and mechanics for the general public, as well as provide a simplified description of quantum concepts using a love metaphor.

The narrator of this poem is someone explaining about quantum mechanics using the interaction and feelings they have for their crush, who eventually turns into their girlfriend or boyfriend. The first stanza illustrates the concept of qubits using two main metaphors: gin and tonic shot, and whether your crush will reply yes or no to your feelings. The gin and tonic shot metaphor is inspired by the article from Kiratas, which illustrates quantum superposition as the ratio of gin and tonic. Here in the first stanza, the narrator offered their crush a gin and tonic shot and asked whether they stated either or both flavors, reflecting the quantum superposition states of a qubit. The second metaphor which is in the last three lines of the stanza is a reference to a metaphor example mentioned during the lecture, where someone gives their crush a piece of paper to answer yes or no to "will you date me?". These two metaphors follow closely with a love theme to illustrate the concept of qubits, as well as symbolizing the narrator's feelings for their crush. The first stanza has a rhyming scheme of AABBCDCDEEEFFGG. Consecutive rhymes help the poem to flow and tie certain ideas together such as line 5 to 8, which ties the qubit explanation with the gin-tonic metaphor.

The second stanza progresses to explain about quantum entanglement. Here, the theme of the lines embodies descriptions of more intimate feelings and connections between two individuals (which is the narrator and their crush) in order to reflect the idea of how quantum entanglement is similarly a profound concept that comes from within two entangled particles, yet it is hard to explain the origin of this property. It simply occurs, just like the chemistry of two intimate individuals who have feelings for each other. Compared to the first stanza, the second stanza uses a very structured rhyming scheme of AABBCCDDEEFFGG to give off a synchronized impression and create an imagery of matching pairs to related to the entanglement property. In my opinion, the correlated behavior of two entangled particles is similar to how two individuals who have a very close bond would behave as well. As such, the content of the second stanza uses imagery of a couple's chemistry to describe the "spooky" action of entanglement.

The third stanza dives slightly into how quantum information is obtained from qubits. At this stage, the narrator is now in a relationship with their crush. Applications like quantum

encryption is minimally referenced in line 4. Line 5 to 9 provides a simplified visualization of the concept on how you can only obtain one bit from information from a qubit upon measurement. The mechanism is illustrated as if the couple is doing a lucky draw to pick a date activity for their next date, which also matches with the random nature of the quantum information obtained upon collapsing a qubit to a defined state. The rhyming scheme adopted in the third stanza is AABBCDCDEEE, which does not match with the other rhyming schemes in the previous stanzas in attempts to portray the superposition state of a qubit. Like the superposition states of the qubit, the rhyming scheme in this poem can be in various arrangements, until you obtain one specific rhyming scheme upon observing the rhyming scheme of one stanza.

The fourth, final stanza brings a conclusion to the quantum explanation using love metaphors and dynamics. It expresses the love of the narrator using the current reality of quantum mechanics, and finally related back to the central theme of this poem (which is providing an explanation for quantum mechanics and information).

In conclusion, this poem aims to provide a simplified explanation for quantum information and mechanics using the language of love. The use of a love theme and a narrator in love hopefully allows the audience to connect to this poem on a more personal level and relate quantum concepts to their everyday lives, which in turns allow for better understanding of this complex field.

Reference

The gin and tonic metaphor: what is a quantum algorithm and why are they so powerful?

Kiratas. (2021, November 15). https://www.kiratas.com/the-gin-and-tonic-metaphor-what-is-a-quantum-algorithm-and-why-are-they-so-powerful/