4/21/22 Update: The University of Toronto EdX program should be getting way more attention than it is getting. There could be my own bias, but I believe that this also reinforces previous constructions/assumptions of the quantum sparse matrix - with the blending of Descartes a bit.

I imagine the applications of these algorithms can be very beneficial, and should be shared.

Old content (approx 3/20/22):
The sparse matrix I am going to choose to implement is the quantum sparse matrix. The applications of this idea are endless

Essentially - the purpose of a precision-recall curve is to add a condensed heat center along the True positive and True negative values, in order to optimize the vision of a given matrix. Such as a rubix code, is it plausible that an algorithm could be constructed that pulls elements into a state equivalent to a quantum version of RREF, which accounts for seasonality/fluidity/ non egalitarian.
However, this algorithm can also be applied to larger matrices, such as a linear regression where you would like to find the best r^2, and non binary values.

Usages :

1. This sparse matrix can be applied to how we think about the world and our lives. I think that data is fluid and not linear, and this idea can be applied to a lot of different scenarios.
2. Can change the way we think about pivots. Pivoting can be done with 4 elements at a time instead of 2 (as long as the elements are non-zero). In real life, there is constant pivoting of elements.

Efficiency Issues:

- I think that a sparsity level of 1.0 (full RREF) is probably unrealistic. Also, I imagine that in a real life matrix, the sparse matrix values likely interact with each other. 1.0 is not likely in that sense, either.
- This means that this quantum matrix is likely anti-linear, and that breaks a few linear algebra rules that the rows and columns should sum exactly to 1.
- Likely not an efficient way to think, as this could lead to a re-evaluation of a lot of linear algebra rules.
- The easiest way I like to think about this is subjectivity. Two individuals looking at the same image are likely to interpret it differently.
-NA values could throw off calculations, and should probably be omitted.

Some of my viewpoints:

1. https://quantumcomputing.stackexchange.com/questions/12706/quantum-operations-as-sparse-matrices
2. Precision-recall curves – what are they and how are they used?
3. Quantum Precision Recall Curves
4. Quantum Pivoting, like a rubix cube
5. Quantum Algorithms

I’m interested in the thoughts of highly advanced developers. Do they notice that in computer vision, sometimes exact summation to 1 in both rows and columns is not likely? I like to acknowledge fluidity. Thanks for reading! :)

Comment: Ethan, I like how you found a way to use a new computing technology to come up with a unique data structure! I admit I'm not that great with quantum computing despite having a module in it for Computer Organization last semester. Please bare with my ignorance!

[redacted]

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[redacted]

4/21/2022 updates:

DEEPER INTO INNER PRODUCT

From **Maria Schuld** ([Info](#))

Inner product (or the core of the entity) can be calculated with her precise calculations found in the info video. Then, KNN or kernels can be applied to the matter around the object (can even be applied to dark matter!). Such as

1. overlap of two quantum states.
2. Look into variational quantum kernels with respect to quantum time series applications of seasonality.
3. Data entanglement to encode new data as it is introduced into the matrix (produces density matrix).
    a. Strategies: Apply Eigenvalues, have different types of sampling.
    b. Can invert the matrix **quadratically faster**.