Collins Aerospace -

Insurance - With plugging in users' info like age, sex, married, etc. Give an offer based on their info.

Investing -

Real Estate – plug in a bunch data, then filter out the bad choices leaving the better one (greedy)

Network Optimization – Divide up data stream in segments, augmenting and divvying up bandwidth for WIFI

Affiliate Marketing -

Data Mining -

Search through data set that utilizes hardware and software tricks. Hardware such as memory addressing. Software such as bit shifting.

<https://www.programcreek.com/2013/01/a-simple-machine-learning-example-in-java/>

<https://blog.primen.dk/basic-neural-network-code-example-java/>

Using bit shifting and factoring, creating encryption and decryption algorithm

Scheduling - <https://algorithm.programmingpedia.net/en/tutorial/7993/applications-of-greedy-technique>

* Weigh time/importance. Depending on how important it is and how long it’ll take, it’ll prioritize the most efficient tasks first.

Dynamic programming for networking, transfer data from a sender to various receivers in a sequential manner

Predicting stock prices

Website that gets passed firewall blocking tech. Have a website where it runs a “virtual machine” of the site trying to reach, but disguised as the other website. For example: want to access facebook.com. School blocks it. Go to disquise.com and run the website through their servers only sending what is displayed to the place where it is blocked.

<https://www.mashvisor.com/blog/real-estate-formulas-beginner/>

<https://realestatelicensewizard.com/real-estate-math/>

Computing if a stock is better to by during a recession or a consistent buy and hold strategy. If so, is there a proper percentage of how much to put in during a recession and the remainder after

<https://en.wikipedia.org/wiki/Quantum_algorithm>

<https://users.soe.ucsc.edu/~qian/papers/QuantumRouting.pdf>

<https://en.wikipedia.org/wiki/Quantum_algorithm_for_linear_systems_of_equations>

<https://github.com/The-Singularity-Research/linear_algebra_for_quantum_computing>

<https://docs.microsoft.com/en-us/quantum/overview/algebra-for-quantum-computing>

<https://en.wikipedia.org/wiki/Quantum_logic_gate#Hadamard_(H)_gate>

<https://people.cs.umass.edu/~strubell/doc/quantum_tutorial.pdf>

**Shor’s algorithm for factoring**

* **Decoherance**
* **Quantum parallelism**
* **G^p/2 +- 1**

Grover’s algorithm for searching an unordered list in square root N time

Tensor Product

Unit circle

Hadamard – Takes (0,1), turns it into (1/√2, -1/√2) or (-1/√2, 1/√2) into (0, -1)

Bit flip – Takes (1,0), turns it into (0,1) or (1/√2, -1/√2) into (-1/√2, 1/√2)

Identity, Negation, Constant-0, Constant-1

Deutsch-Jozsa algorithm – write non reversable functions in a reversable way. Able to produce result in a single query, with an example of using a black box.

* Output |0> — BB — f(|x>) Output’
* Input |x> — BB — |x> Input’

Entanglement

* If the product state of two qbits cannot be factored, they are said to be entangled.
* (1/√2, 0, 0, 1/√2) = (a, b) ⊗ (c, d)
* ac = 1/√2
* ad = 0
* bc = 0
* bd = 1/√2
* Since they are entangled, they have a 50/50 chance of collapsing to a state |00> or |11>
* Hidden variable theory – qbits can be in both states at the same time. Coordination faster than light follows relativity, communication faster than light does not.