First Day Quantum Digital Dreams

Dick Tripover • May 05, 2018

First Day Quantum Digital Dreams

The idea to launch a pioneer Video Network based on Quantum Computing is to show that this is an evolution in computers. The following information is public on dwavesys.com. The idea is to create a Virtually Aware Video Cloud Network to host Web content and feed streaming video content. A focus on Physics sim and QUFL Algorithm for adaptation is used to adapt feed data into a Blender Python database library. This system will create and capture live video feeds from to convert them to 3D data object & language database.

http://www.dwavesys.com/en/dev-tutorials.html

Background reading series: No coding required

OBJ

QUANTUM

INTRO

QC Primer

An introductory document explaining the key concepts behind quantum computing, a powerful and promising technology for solving hard computational problems.

OBJ OBJ

QUANTUM

HARDWARE

QC Hardware

Background on how quantum computing is implemented on D-Wave's processor hardware, using superconducting electronics cooled to near absolute zero.

OBJ OBJ

QUANTUM

SOFTWARE

QC Software

How software has been developed to take quantum computers from low level physics to a modern, accessible and cloud-enabled interface.

OBJ

Applications-level programming

OBJ

TRAVELLING

SALESMAN

Trav. Salesman

Solve the most famous and canonical optimization problem - finding the shortest route to perform a tour of several cities.

OBJ OBJ

HADAMARD

MATRICES

Matrix search

Learn how to search for matrices with special properties, such as the Hadamard matrix

OBJ OBJ

ETERNITY

II PUZZLE

Eternity II

An optimization problem with a $2M prize! Unfortunately, competition is closed, but

you can still have fun trying to solve this crazy jigsaw puzzle.

OBJ OBJ

QUANTITATIVE

FINANCE

Quant Finance

Learn how to use the quantum hardware to do some simple portfolio optimization on correlated stock signals using real market data.

OBJ OBJ

WEIGHTED

MIS

Weighted MIS

Learn how to map Weighted Maximum Independent Set (WMIS) problems onto the D-Wave hardware

OBJ OBJ

MOLECULE

MCS

Molecule MCS

Learn how to use the D-Wave hardware to find the Maximum Common Subgraph of two graphs - with an example of how to use this to find similarities between molecules.

OBJ OBJ

FEATURE

LEARNING

QUFL Algorithm

Use the quantum hardware to develop a machine learning technique that discovers the essential features from a set of images

OBJ OBJ

TEMPORAL

QUFL

Temporal QUFL

Following on from the QUFL tutorial, this describes how to add a time element to the learning algorithm allowing learning on video data and "dream sequences" generation.

OBJ OBJ

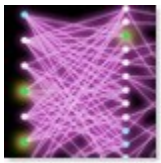
BINARY

CLASSIFIER

Binary Classifier

Learn how to program a quantum version of a binary classifier, a well known technique in machine learning to assign one of two labels to a piece of data.

OBJ OBJ



TRAINING

ANN

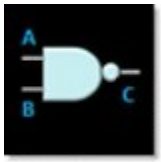
Neural Network

Learn how to train a neural network to recognise images by treating synaptic connections as an optimization problem

OBJ

Machine-code level programming

OBJ



QUANTUM

'NAND GATE'

NAND Gate

Learn how to write quantum machine code. Build a NAND gate - a conventional computing logic block - using quantum techniques.

OBJ OBJ

PHYSICS

SIMULATOR

Physics Sim

Learn how to write a physics application that allows you to simulate the properties of quantum objects such as spin chains.

OBJ