

One Green Quantum Computing Tablet Per Child

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Abstract:

A Paper on the design for the One Quantum Tablet Per Child, the new E-Paper in Graphene and organic polymer on PLA substrate, with a Quantum Ising Glass architecture with spin wave based STT, Quantum Internet for last mile connectivity and a distributed QPU-GPU-MCU architecture for robust scalable fault tolerant computing.

Keywords: Graphene, OLED, MCU-QPU-GPU, integration, E-Paper, Quantum Cloud, Quantum Operating systems, E-Learning, Quantum Tablet, Mathematical Truth, Light as New Age Religion.

Overview

Tablets are preferred to laptops, because of the existence of a multilingual soft keyboard, rather than the need for keyboards in every language. The universal language we seek is mathematics and it is the aim of this tablet to create literacy through online learning in mathematics.

I propose a quantum computing solution, using GPU computing, to create a 3D printable organic LED display coupled to Quantum GPU printed directly on the display, analogous to TFT addressing, in graphene 10nm, quantum well FET technology (Bheemaiah 2019).

For connectivity, I propose the creation of the Quantum Internet for a reasonable bandwidth for SaaS and Cloud computing, holding the KM and the NLP for digital assistants like Cortana, Siri, Alexa(Hoy 2018) and Teaching Bots like Chappy/Goody/Julie Kid(Little Lisa)(Paphus Solutions Inc n.d.)(Paphus Solutions Inc n.d.)(Paphus Solutions Inc n.d.; Goody the Chatbot Teaches on Chatbot Training 2018)

Goals

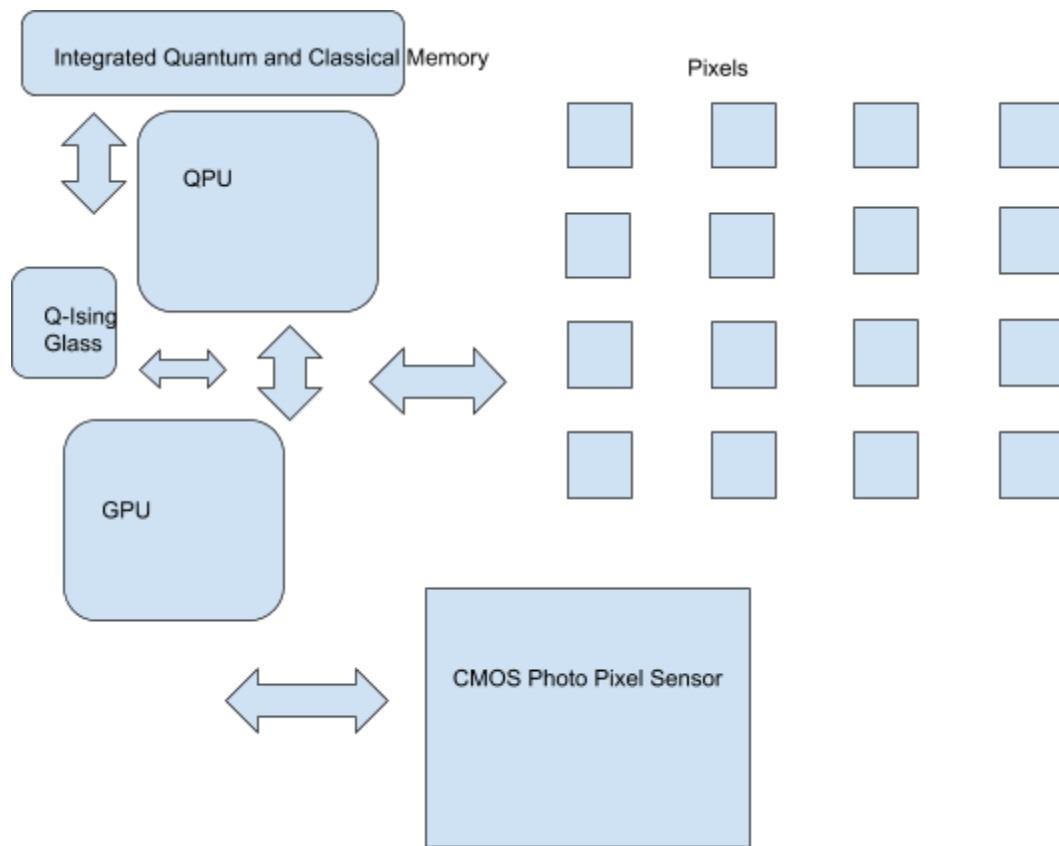
1. Creation of 3D printing technology at 10nm scale for printing the quantum display computing.
2. Design of the Quantum Computing Display Tablet, one for every child.
3. Design of a quantum Operating System for the Tablet.
4. Propagation of the mathematical truth as a new age religion of light.

Specifications

It is proposed to create a 1024 X 800 pixel color OLED display by 3D printing, coupled to a GPU and QPU per group of pixels, the design of the QPU is to be very simple, possibly 1-10 qbit and fault tolerant in design. There is to be an entanglement coherence linking the QPU-GPU-MCU integration with a centralized MCU for bootstrapping and backup. The rest of the tablet is printed in PLA and the computing in graphene, memory is shared and distributed too with both classical and quantum memory, as an auxiliary computing to the GPU.

The architecture uses a Quantum Bus for Ising Spin glasses rather than data and control busses.

The Spin Glass with STT based spin waves forms the basis of the architecture of QPU-GPU, QPU-QPU and MCU integration.



The Quantum Internet is spin coupled and a peripheral device, the design to be created. And the power bus is fuel cell powered, either by alcohol or Al/Mg fuel cell.

Milestones

I. Creation of a P.O.C of one cell.

Demonstration of one RGB OLED pixel with GPU, QPU and memory integration.

II. P.O.C of Quantum Internet with stable coherence over the last mile, in lieu of 802.11

Demonstration of a reasonable bandwidth with a spin based quantum internet for last mile connectivity from fibre.

Technology Background.

Creation of 3D printing technology at 10nm scale for printing the quantum display computing.

3DP in Nanoscale is an ongoing research effort with many successful results and even commercial ventures.(Shacham-Diamand 2017; Sadasivuni, Deshmukh, and Mariam Ali S 2019; Ahmad, Gopinath, and Dutta 2019; Su et al. 2018; Berger 2016; Ghamsari 2017; Berger 2009).

Many nanomaterials for SLS based 3DP are already in use, the forerunner being Graphene. While atomic scale components and atomic scale Graphene sheets have been fabricated by many technologies, recently 3DP based nanofabrication of graphene dot based nano computing has been achieved at sub 10 nm scales, making the fabrication of QPU possible.

Design of the Quantum Computing Display Tablet, one for every child.

CUDA pipelines live!

Much of QPU-GPU-MCU integration (Bheemaiah, n.d., n.d.) enables very fast processing with embedded data caching and processing architectures, many new quantum algorithms have led to the emergence of CUDA like QPU HPC.(Humble and Britt 2016; Haner et al. 2016; Lellouch 2011)

(Humble and Britt 2016; Haner et al. 2016; Lellouch 2011)work on out of order and speculative execution, data speculation and ILP is modified by true parallelism in lieu of quasi parallelism in quantum architectures. The most significant being the replacement of a pipeline idea with reconfigurability and dynamic quantum paradigms.(Van Meter 2014; D'Amico 2006; Beigl 2005)

Design of a quantum Operating System for the Tablet.

Present quantum computing simulators and circuits use the quantum cloud for quantum circuit as algorithms, for effective real time computing, much work on quantum operating systems with a dynamic paradigm of circuit configuration caching is the logical step as dynamic architectures, similar to reconfigurable computing.(Corrigan-Gibbs, Wu, and Boneh 2017)(“Quantum Computing in the Cloud: Where We Are Today” 2019)

A quantum operating system for a tablet would entail a quantum kernel for quantum cloud functions, a functional cloud on the QPU, distributed similar to a CUDA or QUDA(Bheemaiah 2019) architecture, with dynamic circuits, extendable to a field formalism for implementing QUDA based computing.

Propagation of the mathematical truth as a new age religion of light.

Mathematical truth, infinities and asymptotes, are metaphors of mathematical philosophy, enhancing lingual metaphors as metaphysics, “the truth is out there” is all the more relevant to mathematical truth, right with us, with a helio-centric universe, with our Sun, the very star we seek.

As the Google translator inches towards the Babel’s Tower, we seek to build, a more Universal Language has always existed to better describe the Universe and it is Mathematics, needing mathematical literacy and the need for it in e-literacy amongst children. The one quantum tablet per child, (“ONE QUANTUM TABLET PER CHILD” n.d.) aims to market quantum tablets, as e-paper, much like Amazon Kindle with software and cloud support for e-literacy and e-learning experiences. With in built QUDA based HPC (Bheemaiah 2019), it is a next generation architecture at a very small cost of sub \$10 solutions with a much wider applicability and a larger target market compared to the present one laptop per child solution. This e-paper compliments already successful wearable based e-learning using inexpensive smartwatches like a GT08, Digital Pens and Bluetooth Headsets. (Garcia et al. 2018) (Elliott 2017) (“Website” n.d.) (Elliott 2017; Garcia et al. 2018)

As a new reality of Light and Shadows, outruns the checkered world of e-ink, polarized droplets of ‘white’ and ‘black’ colored inklets, Light transcends the senses, in a mathematical truth, symbolizing freedom through literacy, mathematical literacy for a new age, for the population of children, not as mere statistics, but as more meaningful semantics and a transcendence to that purpose, one of transcendence to light.

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