STS.034 Final Project Ideas

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Idea 1: Quantum Computation

This project is a science feature article for the general public, who does not need to have much background knowledge on modern physics or computer science. The article will begin with several potential applications of quantum computers, so that my readers can have an impression on their huge advantages over classical computers. Then I plan to use everyday language to tell my readers what quantum mechanics is, and how quantum mechanical laws help improve our calculation abilities beyond classical limits. I will also talk about the challenges in current research, the most important one being the limited lifetime of coherence, and the recent progress made by different research groups.

Idea 2: Distributed Computation

This project is still a science feature article for the general public. As research in various fields develops, scientists these days require more and more computational power. Such computation is done traditionally by supercomputers. But distributed computation costs much less and applies to many areas. The idea is to let volunteers around the world contribute to a distributed project with idle computational power on their personal computers. I will write about how this idea came into being, and how it is being implemented. I will also talk about several distributed projects and some other potential applications. Finally, I will write about the challenges of distributed computation, as well as its future prospects.

Then I came up with some more ideas for a science feature article, but only very primitive. I still write them down here.

Idea 3: From Tangling of an Earphone Cable to Folding of a Protein

Idea 4: Science in Biometrics