**CS4400: Assignment 2**

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**D-stream**

**Paper 1:**

1) **Four key conclusions-**
   a) High efficiency and performance systems are required for a fast-growing internet of things application.
   b) Shared cache configuration is more efficient and has less silicon area then private cache.
   c) For large cache configuration shared single port system is suitable.
   d) For small sizes multi-port system is optimal.
2) **Four key technology insights-**
   a) Soc architecture
   b) Private instruction cache
   c) Shared instruction cache
   d) Multi-port instruction cache
3) **Four key insights of relevance to processor scalability-**
   a) Multiport system improves the performance by 40% than private cache system.
   b) It is 20% more energy efficient than private cache system.
   c) Single port system is 20% more efficient than private cache system.
   d) It is 30% more energy efficient tan private cache system.

**Paper 2:**

1) **Four key conclusions-**
   a) Nanophotonic technology is one of the key solutions for the future generation interconnects.
   b) MRs and lasers should be jointly tuned to improve the efficiency of interconnects.
   c) Silicon photonic are affected by the change in temperature.
   d) Several improvements will have to be made in silicon photonics to make it a viable and realistic solution for interconnects.
2) **Four key technology insights-**
   a) Nanophotonics
   b) Optical communication using wavelength division multiplexing.
   c) Laser and MR tuning method
   d)
3) **Four key insights of relevance to processor scalability-**
   a) Tuning of MR and laser leads to 53% reduction in energy use.
   b) It also leads to 15% decrease in the uniform chip activity.
   c)