

New optical networks as a coding problem

Andrew Moore

A new generation of optical systems for the local, system and machine-area networks has been enabled by physics developments motivated in the telecommunications arena. While not originally intended, some of the maturing technologies of the world-scale telecommunications systems may enable a new/different style of networks for the smallest of network-scales, e.g. from LAN down to system and chip interconnect.

However, to best-capitalise on these ideas, it is not appropriate to simply recycle the old mechanisms for coding and data-representation.

Additionally, these new networks provide our best-hope at reducing the long-standing problem of end-to-end latency however, like the data-representation, best practice will not be to recycle current techniques.

This talk will present an engineer's (rather than mathematicians) perspective of these problems, their context and indicate where fertile research areas exist.