

COMP/ELEC 429/556

Introduction to Computer Networks

Overview

About me

- Grew up in Hong Kong
 - B.S. University of Washington
 - Ph.D. Carnegie Mellon University
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- Research interests in networked systems
 - Teach courses related to computer networks at both undergraduate and graduate levels
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- Chair, CS Graduate Committee (Director of Graduate Studies)

BOLD Lab

The screenshot shows a news article from GCN. At the top, there's a banner for "RESEARCH REPORT THE VIRTUAL PUBLIC" sponsored by NetApp and Cisco. Below the banner, the main headline reads "iPlant delivers free big data tech to the bioscience community". The article is written by Paul McCloskey on Oct 03, 2013. The content includes a large image of a DNA sequence visualization and a detailed description of the iPlant Collaborative's work.

NETWORK (/NETWORK)

Researchers Target Network Bottlenecks

Researchers at Rice University will use a three-year National Science Foundation grant to improve network efficiency and speed up science research.

BY COLIN WOOD ([HTTP://WWW.GOVTECH.COM/AUTHORS/COLIN-WOOD.HTML](http://WWW.GOVTECH.COM/AUTHORS/COLIN-WOOD.HTML)) / SEPTEMBER 30, 2013

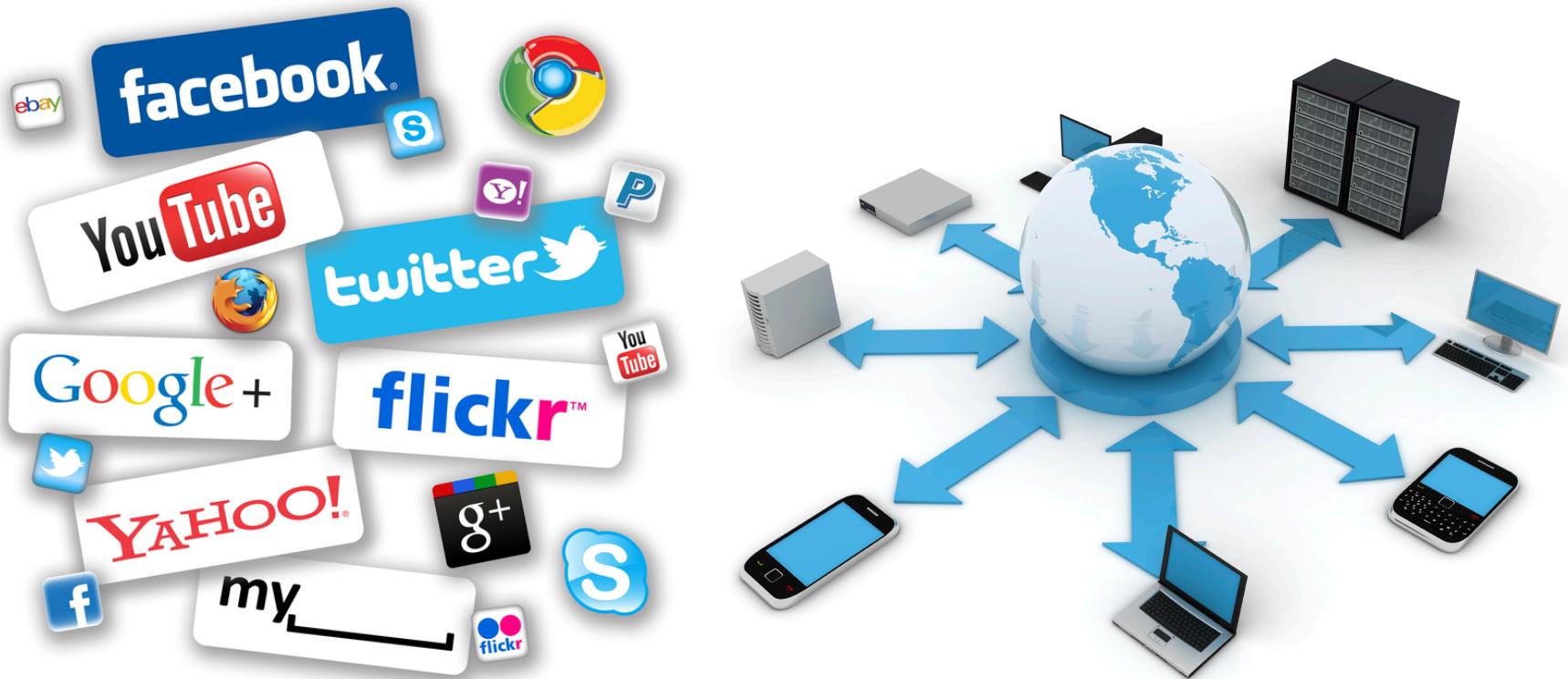


The screenshot shows a news article from eCampus News titled "Rice University creates BOLD system to handle Big Data". The article is written by Jim Groom, Assistant Editor, and published on September 20, 2013. It features a large image of a computer screen displaying binary code and text about the BOLD system. The article discusses the challenges of managing big data in science and engineering.

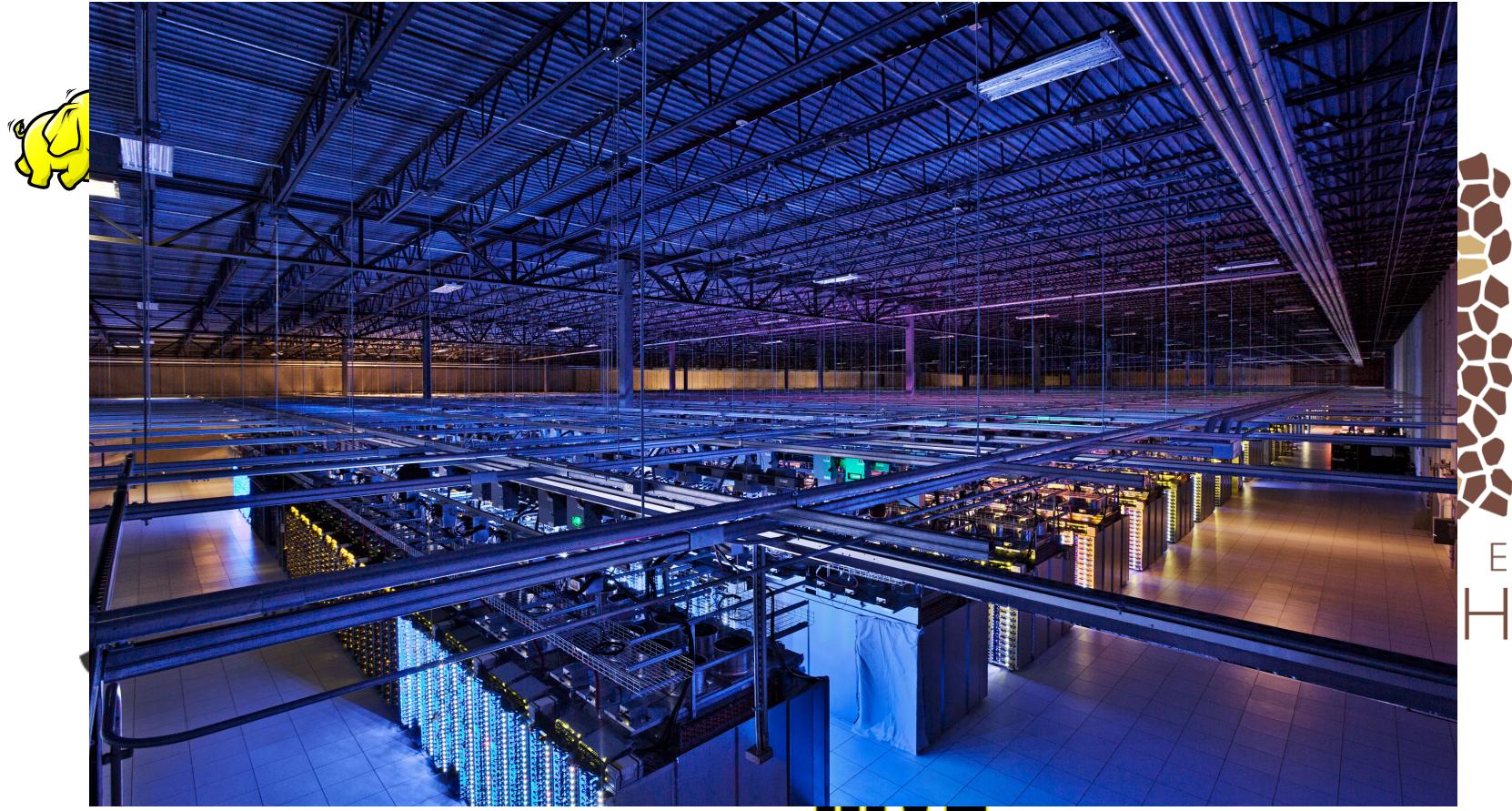
Our wonderful TAs

- Jaeho Lee
- Dingming Wu
- Runhua Zhang

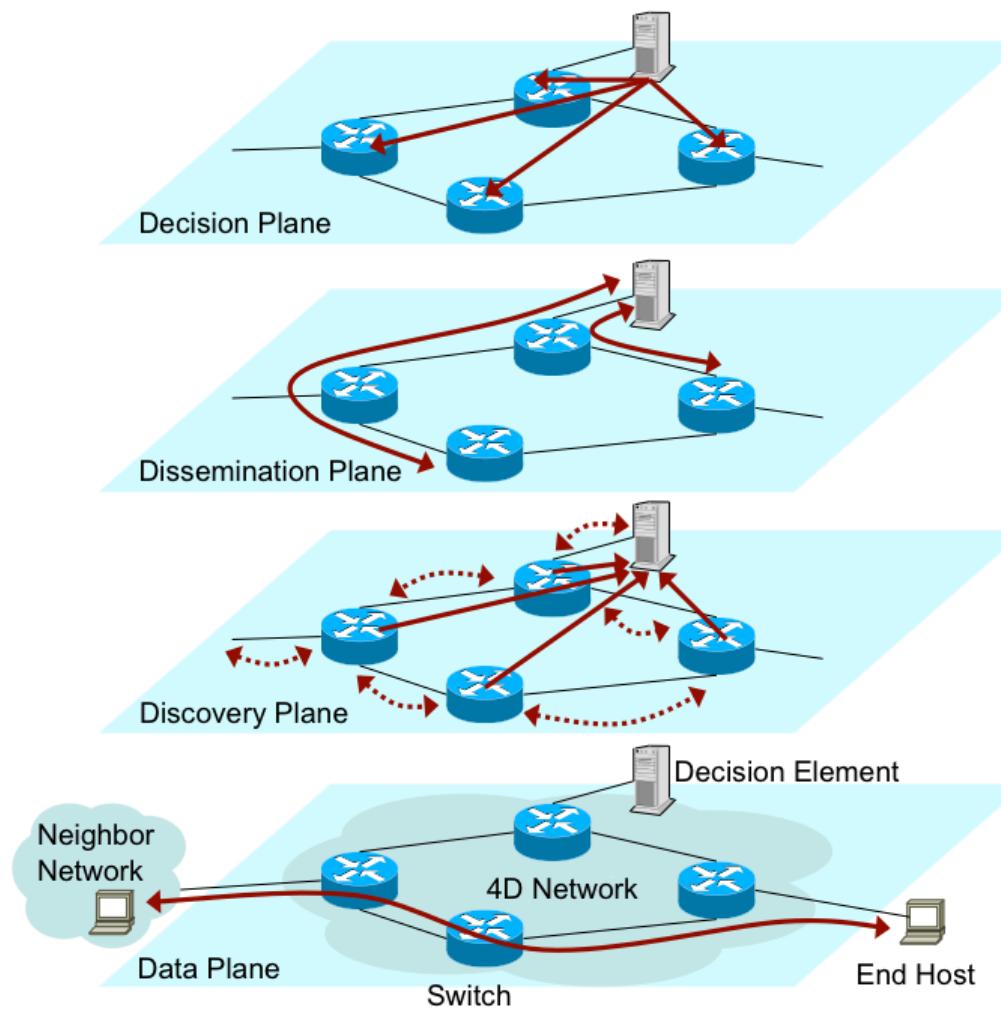
Obviously Internet Makes These Possible...



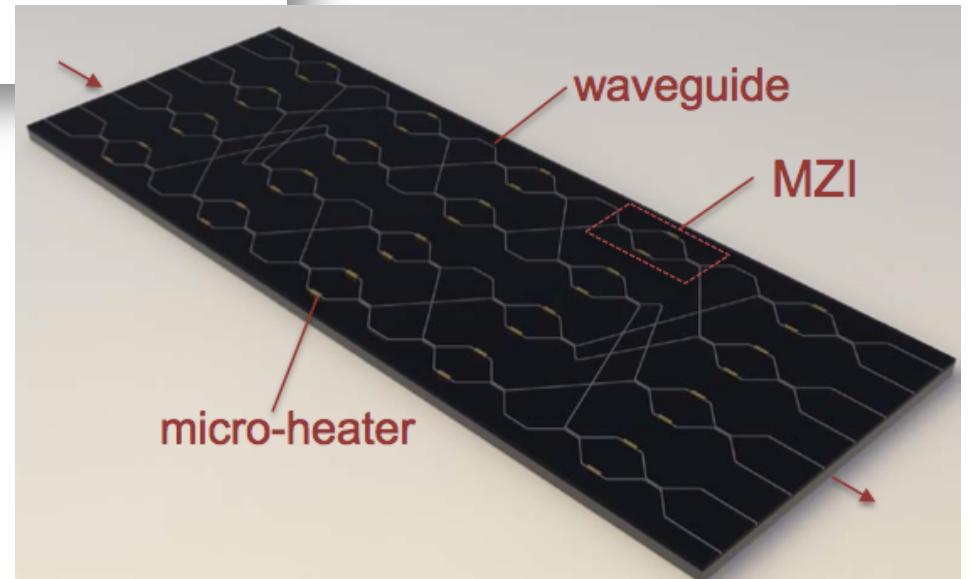
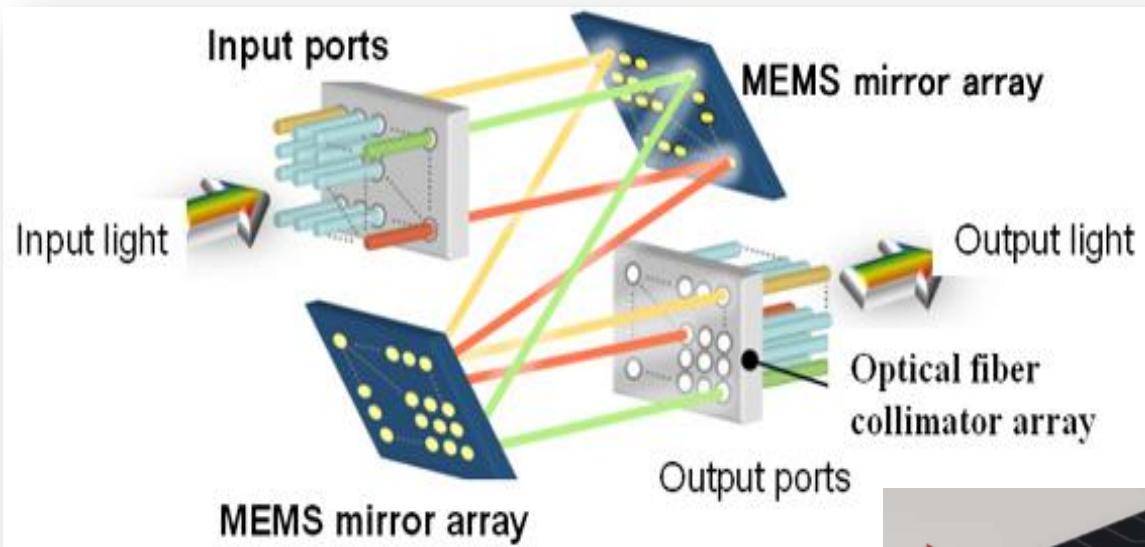
Network Crucial to Solving Hard Computational and Data Intensive Problems



Software Defined Networking



Optical Networking



Internet Remains Unreliable



HOME BLOG ABOUT US PRODUCTS AND SERVICES NEWS

What caused today's Internet hiccup

Posted by Andree Toonk - August 13, 2014 - [BGP instability](#) - No Comments

So whatever happened internally at Verizon caused aggregation for these prefixes to fail which resulted in the introduction of thousands of new /24 routes into the global routing table

How stable is the Internet

So how do we know if the Internet was really unstable today? One way is to look at the number of BGP route announcements.

Internet Remains Insecure

HACKER REDIRECTS TRAFFIC FROM 19 INTERNET PROVIDERS TO STEAL BITCOINS



How Pakistan knocked YouTube offline (and how to make sure it never happens again)

YouTube becoming unreachable isn't the first time that Internet addresses were hijacked, but it spurs interest in better security, it may be the last.

The image is a screenshot of the AT&T website. At the top left is a black Samsung smartphone displaying the time as 12:45 PM. To its right is the large white "att.com" logo. To the right of the logo is a blue call-to-action button with the text "See today's special offers". Below the logo is another blue button with "Shop now". In the top right corner is the AT&T globe logo. The main content area has a white background. On the left, there's a red horizontal bar with the text "Tech Culture" above it. Below that is the date "February 25, 2008" and the time "4:28 PM PST". To the right of the date are several social media sharing icons: Facebook (f), Twitter (t), LinkedIn (in), Google+ (g+), Email (envelope), and a speech bubble icon. To the right of these icons is a three-dot ellipsis. In the center of the page is a line graph on a grid background. The y-axis is labeled "Availability Percent" and ranges from 0.00 to 100.00 in increments of 10. The x-axis shows dates from February 2008. The graph shows a sharp drop from 100% availability to 0% on February 24, 2008, and a sharp rise back to 100% on February 25, 2008. Below the graph is the caption "This graph that networkx". On the right side of the page, there's a red sidebar with the text "Talk to us 24/7" and "Another reason to switch to Stat".

Course goals

- Knowledge and skills
 - How stuff work; skills from doing hands-on projects
- Scalability
- Performance
- Coordination
- Robustness



Assignments

- 2 Homeworks (done individually)
- 2 Exams (done individually)
- 3 Projects (done in groups of up to 3 people)
 - Networked Application, Reliable Data Transport, Distributed Routing
 - 4 Flexible Slip Days for each student

Learning from each other

- I try not to spoon feed you the answers
 - Help you discover part of the solution
 - Let you feel smug
- Peer to peer discussions
 - Help to draw out the questions
 - Some like it, some don't
 - IMHO, it helps most students
- Refrain from non-course related activity in class

