Today’s Agenda

1. Introductions
2. Contents of the class
3. Coding demo
4. Pick papers to present
5. Meet teammates
Introductions
My Interest in Networking
In the last 25 years, advances in networking and communications have produced huge societal changes.
In the last 25 years, advances in networking and communications have produced huge societal changes.

the Internet

THE ARPA NETWORK
DEC 1969
In the last 25 years, advances in networking and communications have produced huge societal changes.

the World-Wide Web

(SPIRES
(Stanford Physics Information Retrieval System, first website outside Europe))
In the last 25 years, advances in networking and communications have produced huge societal changes.

Wi-Fi
In the last 25 years, advances in networking and communications have produced huge societal changes.

Skype
In the last 25 years, advances in networking and communications have produced huge societal changes.

**Facetime**
In the last 25 years, advances in networking and communications have produced huge societal changes.

Google Hangouts
In the last 25 years, advances in networking and communications have produced huge societal changes.

Netflix
In the last 25 years, advances in networking and communications have produced huge societal changes.
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Bitcoin
In the last 25 years, advances in networking and communications have produced huge societal changes.

The anatomy of a large-scale hypertextual Web search engine

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Abstract

In this paper, we present Google, a prototype of a large-scale search engine which makes heavy use of the structure present in hypertext. Google is designed to crawl and index the Web efficiently and produce much more satisfying search results.
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Napster
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BitTorrent
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Dropbox
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MapReduce, Hadoop, Spark
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Meteor, Derby, React
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Bolo
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World of Warcraft
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Snapchat
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Wi-Fi, LTE, SDN, BGP, MIMO, mesh-networking, full-duplex, medical devices, undersea, deep space...
This class

1. My goal: Help you realize a great project
2. Teams of 2–3
3. Two-page proposal by January 13
4. Present in last week of class
5. Writeup
Some ideas

1. Filesystem that stores everything in pings in flight
2. Solve the Emoji Crisis
3. sshfs, but keeps connection across change of IP address or loss of connection
4. ISP in the sky: share multiple connections
5. Connect to every node in the Bitcoin network and...
Also...

1. Reading group
2. Congestion-control “contest” (in February)
3. Office hours: Wed., 3–4 p.m., Gates 282
4. Questions on Piazza
5. I am here to help you!
Coding demo (sourdough)
Paper captains
Team discussions