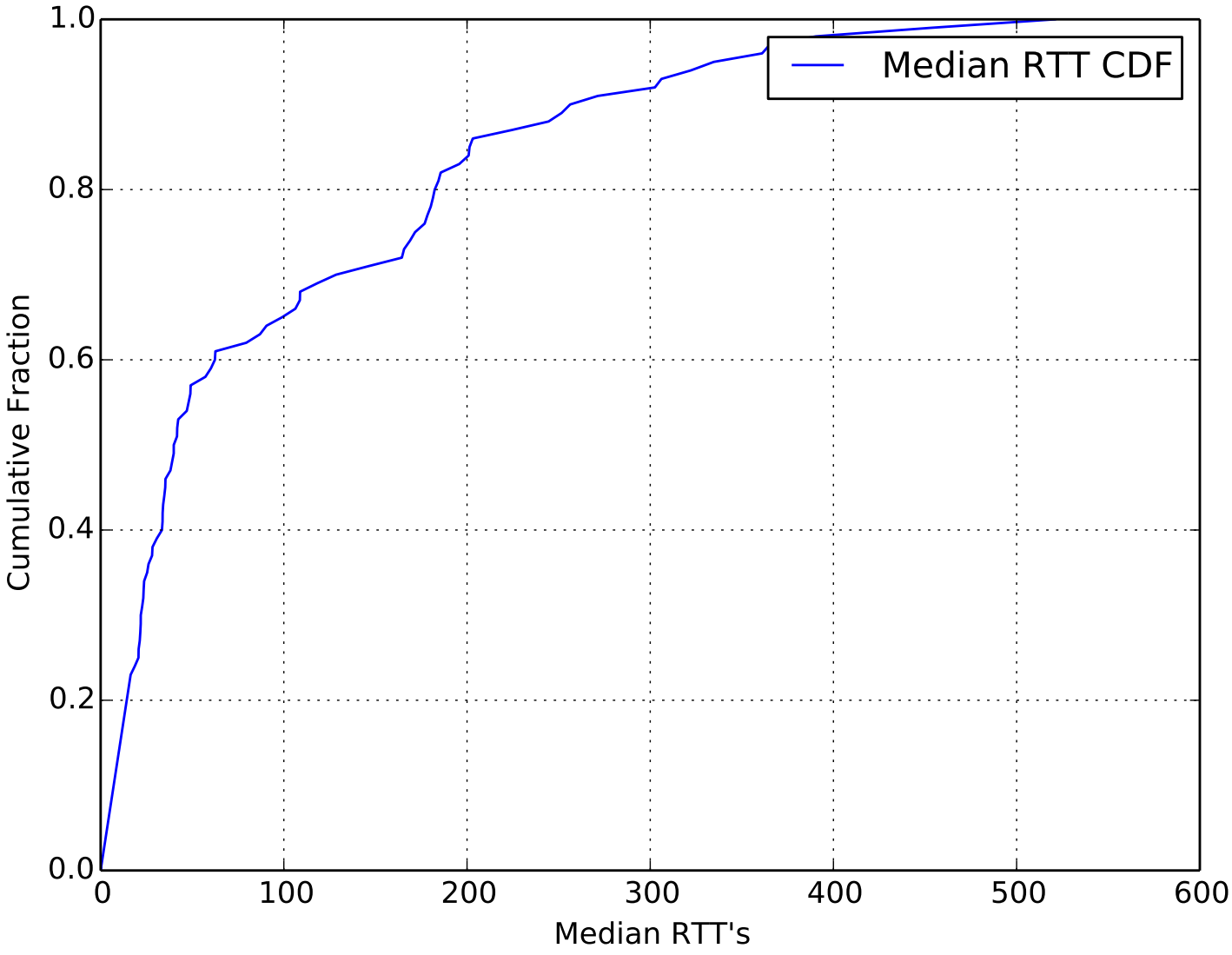
CS168 | Fall 2016 Introduction to Internet: Architecture & Protocols

Project 3: Measurement

Peter B. Lee | October 2016

1 Round Trip Time

1. Questions on experiment a:
   (a) 22% never respond to pings. 35% fail at least one ping.
   (b) CDF on next page.


Median RTT CDF
Cumulative Fraction
Median RTT's
0.0
0.2
0.4
0.6
0.8
1.0
0
100
200
300
400
500
600

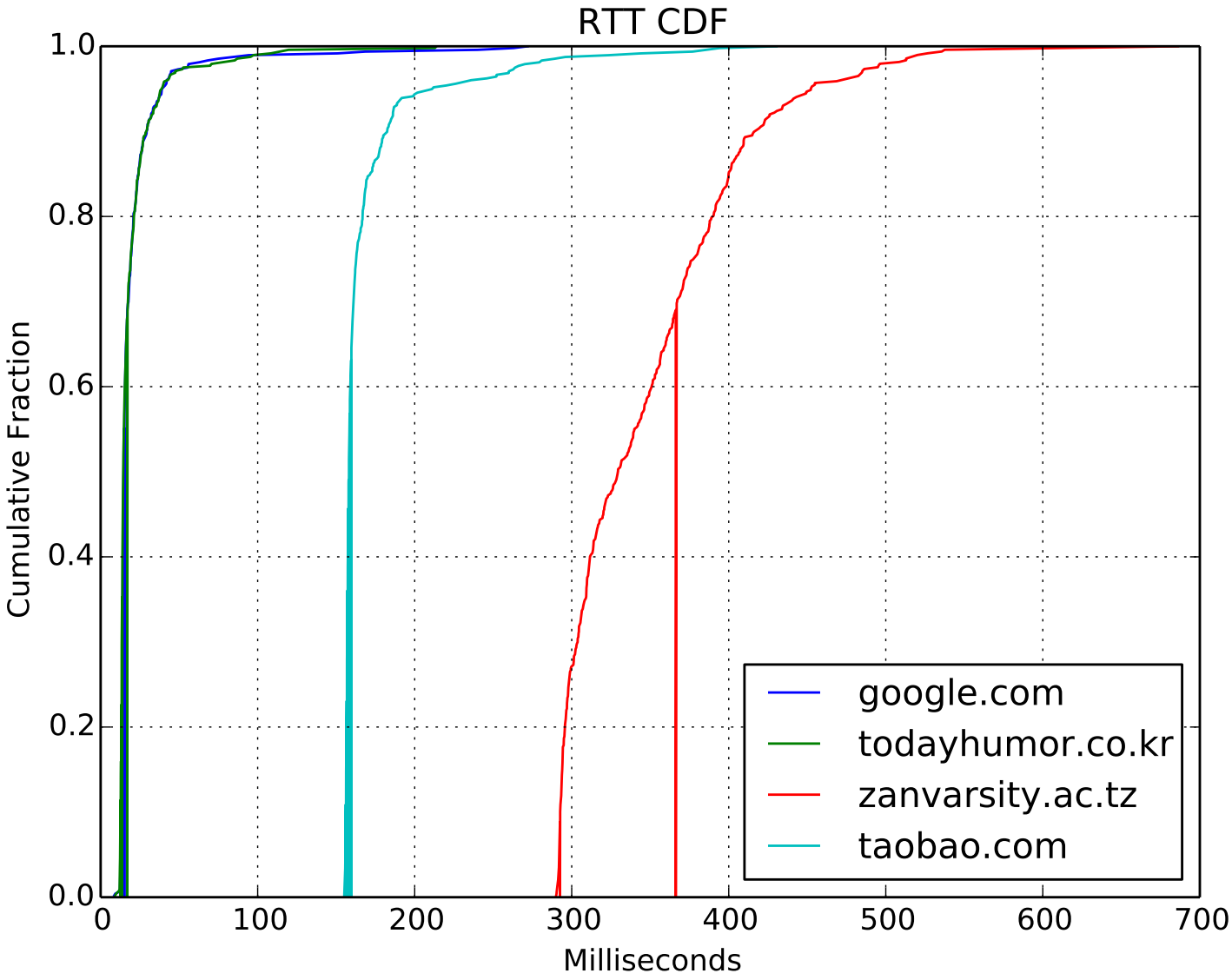
2. Questions on experiment b:

   (a) For "google.com", median RTT: 95.495 ms, maximum RTT: 6.872 ms.
   It's loss rate is 0.0.
   For "todayhumor.co.kr", median RTT: 154.546 ms, maximum RTT: 11.985 ms.
   It's loss rate is 0.0.
   For "zanvarsity.ac.tz", median RTT: 680.526 ms, maximum RTT: 76.276 ms.
   It's loss rate is 2.0.'
   For "taobao.com", median RTT: 668.561 ms, maximum RTT: 74.398 ms.
   It's loss rate is 0.8.

   (b) CDF on next page.

   (c) i. The multiplier for google.com is $3.18537033 * 10^{-10} s^2/m$. The multipler for zanvarsity.ac.tz is $2.26999039 * 10^{-9} s^2/m$.

   ii. The reason why the ping time is not equal to the speed of light time is due to several factors, one example being distance that the packets have to travel back and forth, using cables and routers. Due to this, trying to ping a location that is farther away such as zanvaristy.ac.tz's servers compared to google.com's yields for a greater median RTT. This would mean that a website's "physical location" contributes to the amount of time it takes to ping the website.


RTT CDF
Cumulative Fraction
Milliseconds
1.0
0.8
0.6
0.4
0.2
0.0
0
100
200
300
400
500
600
700
google.com
todayhumor.co.kr
zanvarsity.ac.tz
taobao.com

2 Routing

3 Naming