Plan

- Recap on ROW
- The Evaluation Section
- Debate: Zoom should use ROW to improve the quality of our video chats.

Logistics

* DP Prep report due 2/20
* Mid-semester feedback form
* For Tuesday: DCTCP

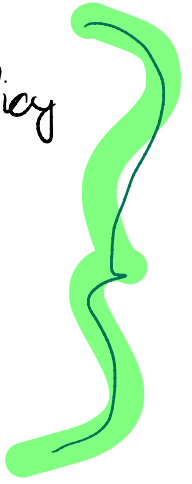
Recap: Goal of BGP

1) Route quickly around outages / link failures

2) Applications can determine routing policy

↳

3) Expressive routing policy

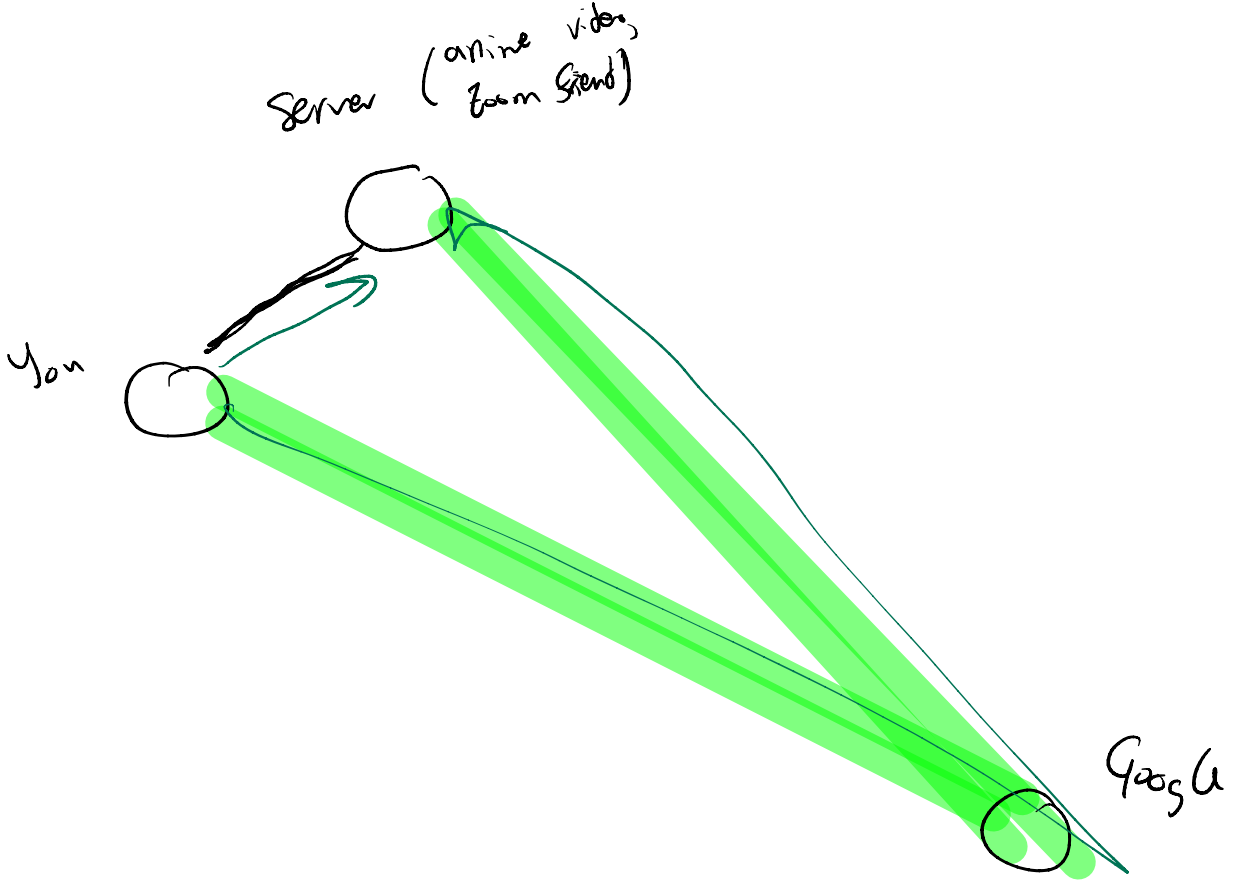


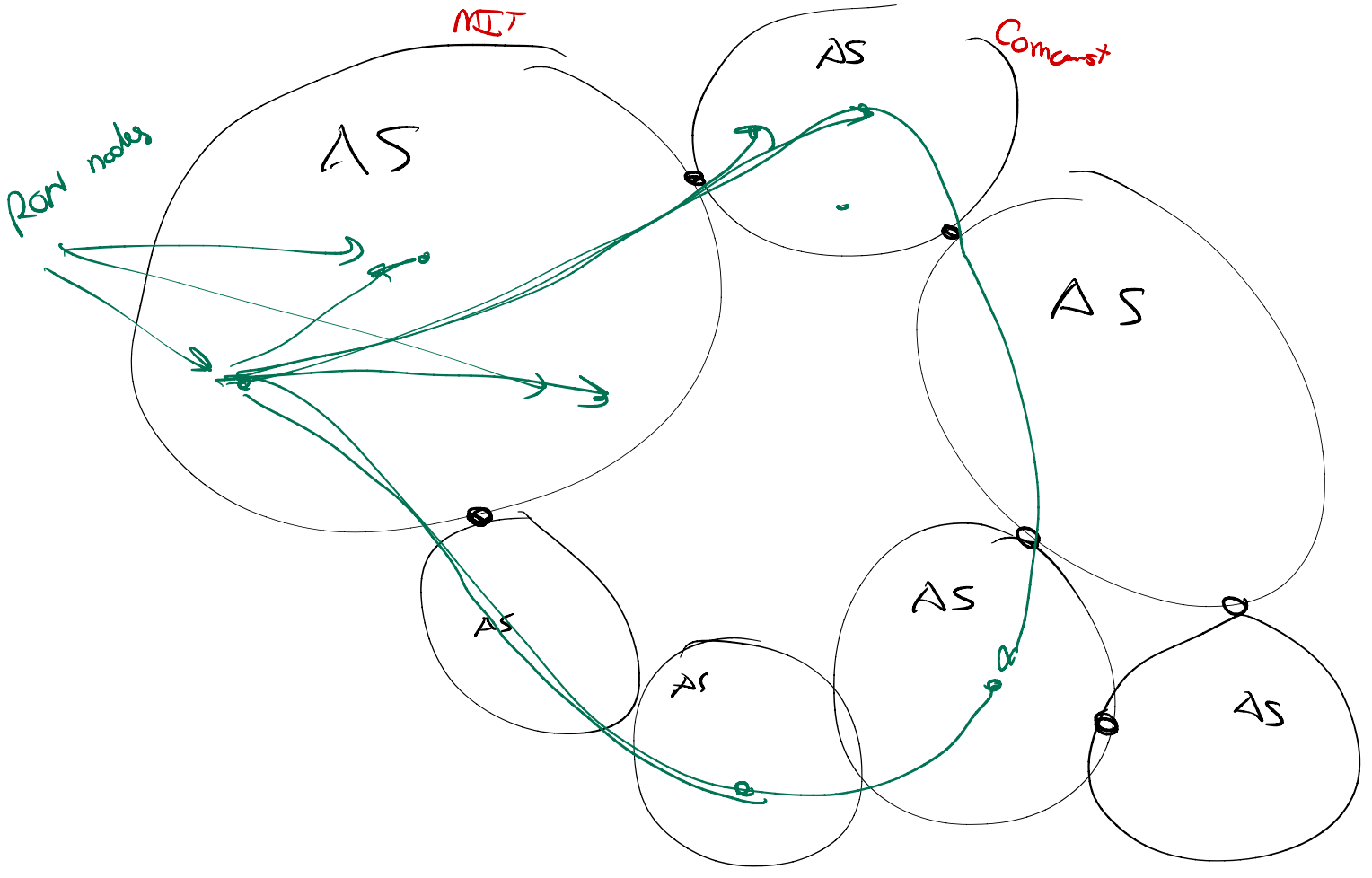
Zoom audio call

+ latency

Streaming online

+ throughput


Server (anime video, Zoom friend)
You
Google


MIT
AS
Comcast
Ror nodes
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In science, what is the goal of an experiment?

* Test a hypothesis
  - ↳ Earth is flat? ⟶ Acc/reject

* Collect data — measure
  - ↳ Speed of light
  - ~~Speed~~ Acc due to gravity.

Is the system good?

How good is latency/throughput?

* [In engineering] Compare costs/perf/.....

Better than nothing?

↳ Engine efficiency

A debate

Resolved: Zoom should implement RON to improve video experience for our ~20 person Zoom calls?

Even room: In favor

Odd room: Against

For

+ Lower latency
+ Remove load from central server
+ Centralized routing → scale
+ Help during dropped calls

Against

- Scalability
- Routing flexibility not useful
- Latency can be worse
  - during outages
- Security

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Recap: Goal of RON

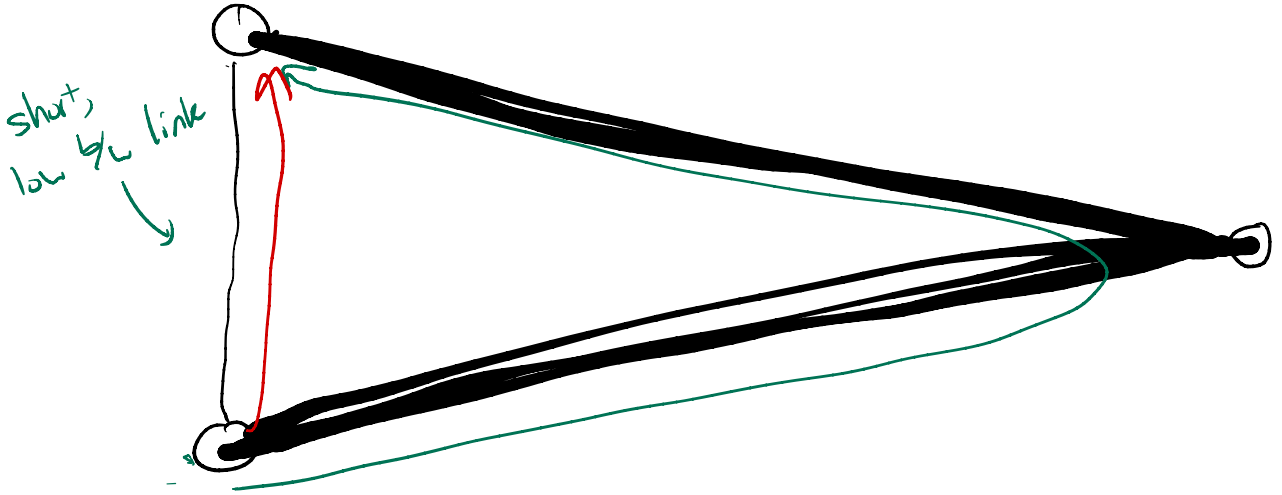
1) failure recovery → routing around not failures quickly.
2) Path selection — application choose route more precisely
3) Framework for implementing expressive routing policies

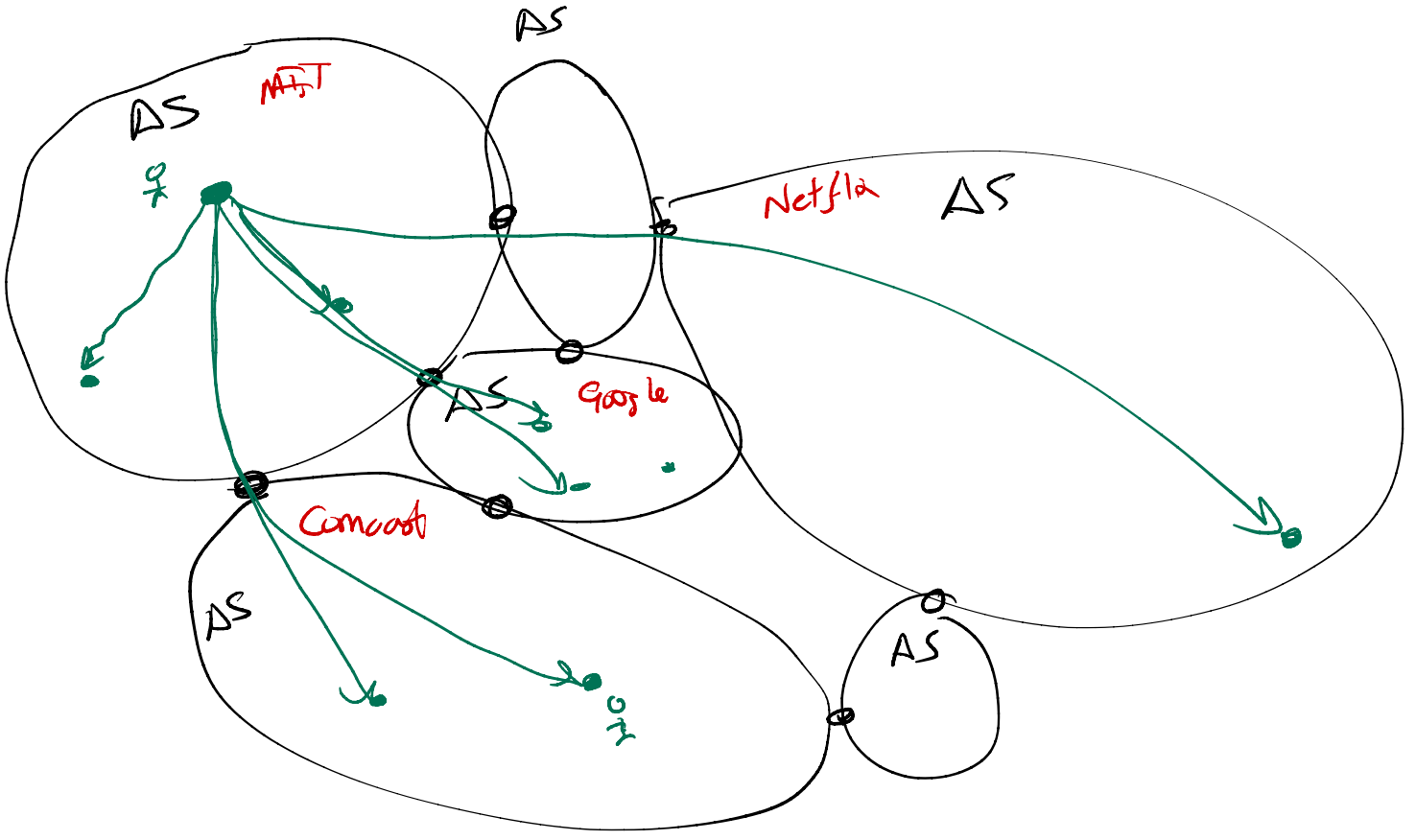
Video streaming

- low latency
- high bandwidth
- low packet loss

audio chat

- low latency
- high bandwidth
- low packet loss


short, low b/c link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Comcast
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In science, what is the goal of an experiment?

* Test a hypothesis
  - ↳ Does X work how we expect?
* See how well your solution works
  (quantitative variant)
  - * how quickly can recover
  - * bandwidth consumption
  - * ⋮
* [Engineering] Compare A vs. B
  How much better are we than Internet?

A Debate

Resolved: Zoom should implement ROV to improve video experience for ~20-person Zoom calls.

Even room: In favor

Odd room: Against

For

++ Could potentially reduce latency

++ Scales large enough for ~20 person Zoom call

++ Packet loss is important

+ Useful when latency is high

++ Use only in small rooms

+ Sending audio one d.f path

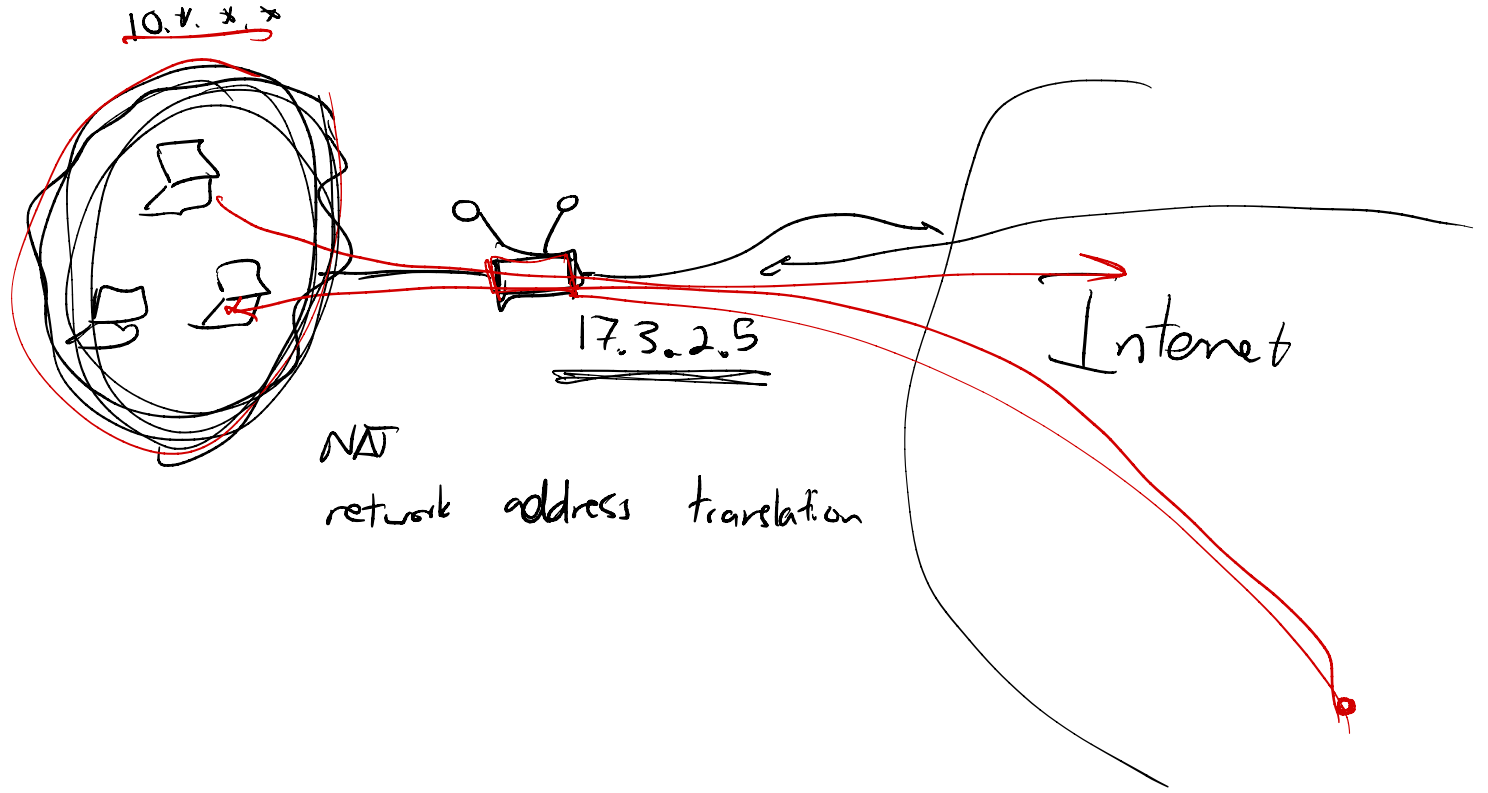
Against

- Wouldn't scale
- Tries to handle packet errors
- Latency could increase

- Best for routing other people's data
- Benefits not worth cost
  - ↳ often, single person's wifi network

- NAT

- Security !?



NAT

network address translation