



Stony Brook University

liberate,(n): A library for exposing (traffic-classification) rules and avoiding them efficiently

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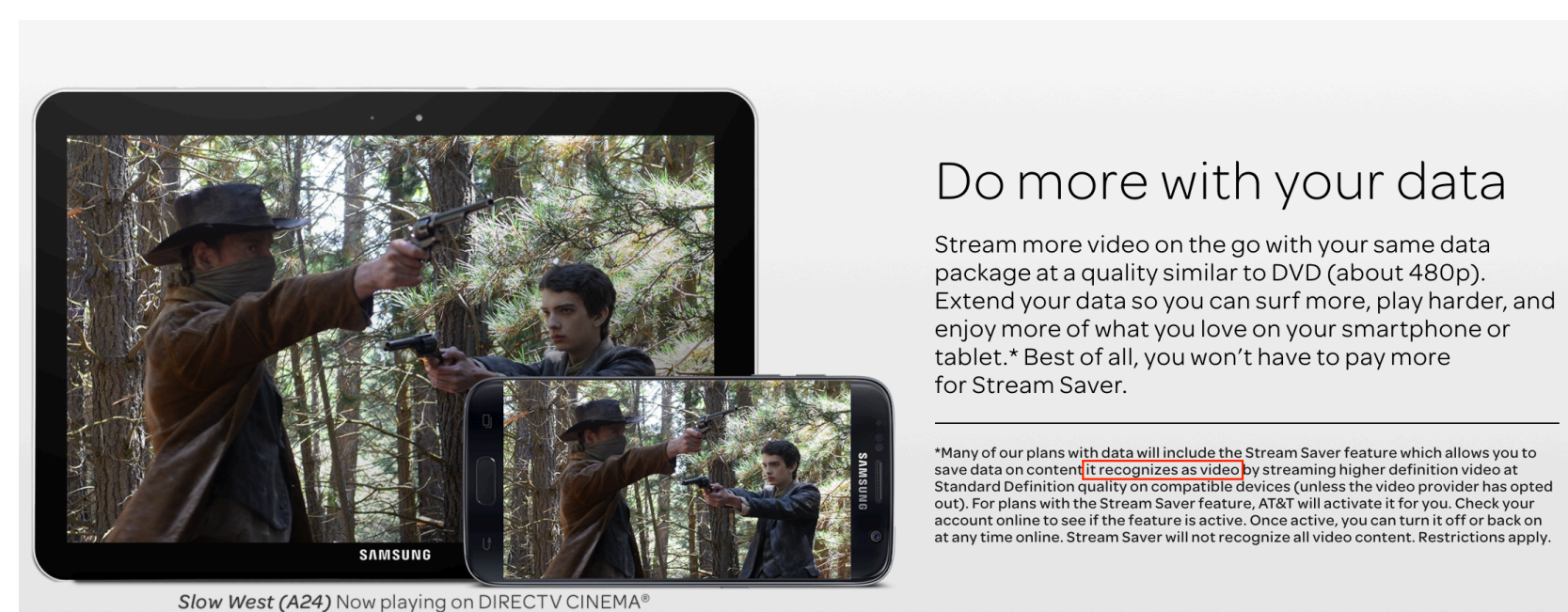
Motivation

- Differentiation is the practice of giving different service to different applications
- Net neutrality can potentially be violated via traffic differentiation
- Traffic differentiation requires a device to identify traffic as certain application

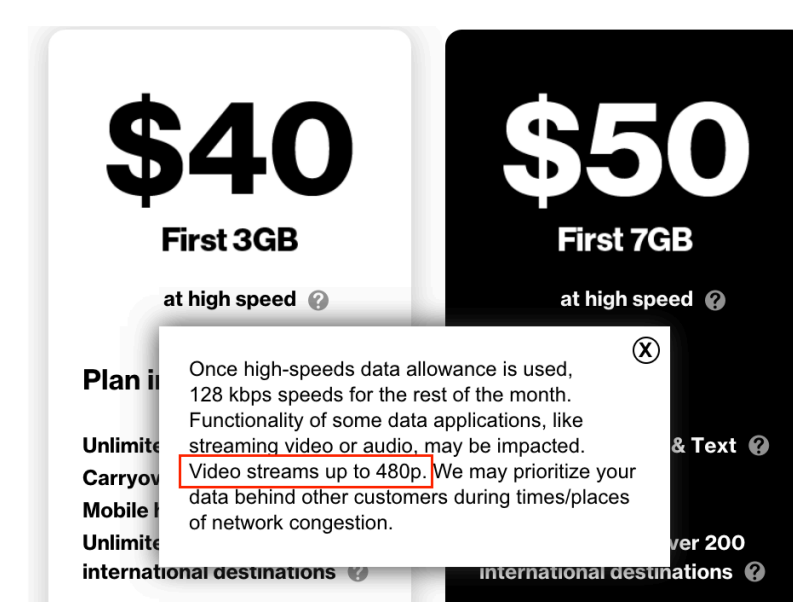
Key questions

- How do they detect applications?
- Can we circumvent classification?

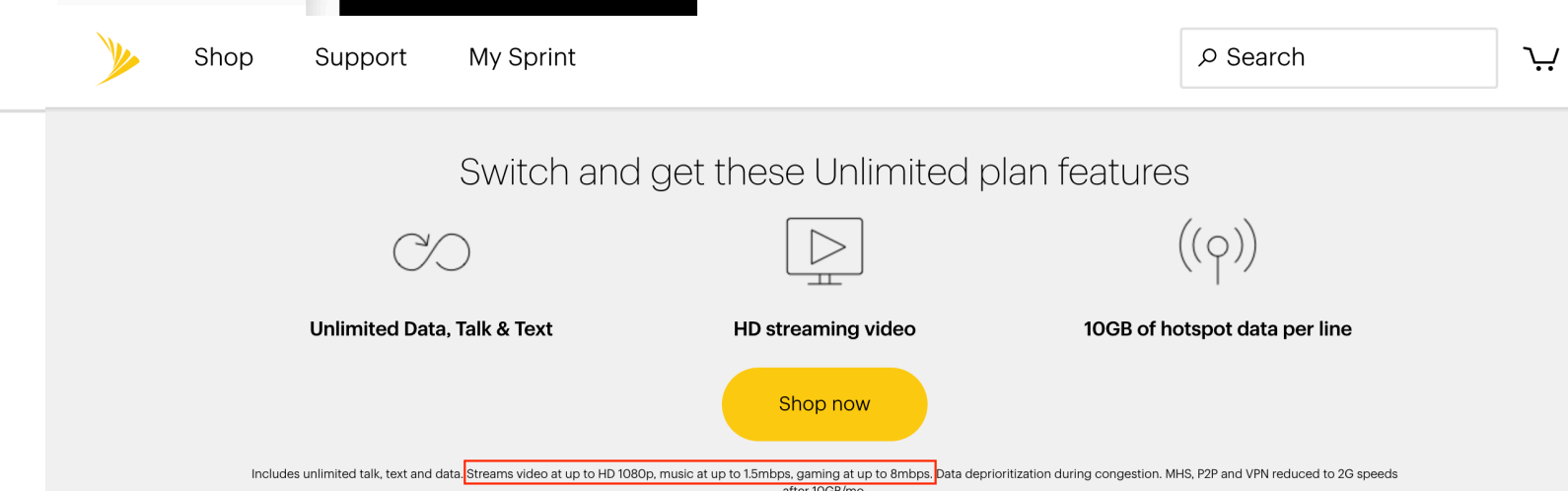
Cases of differentiation



Not just Prepaid, Verizon Prepaid.

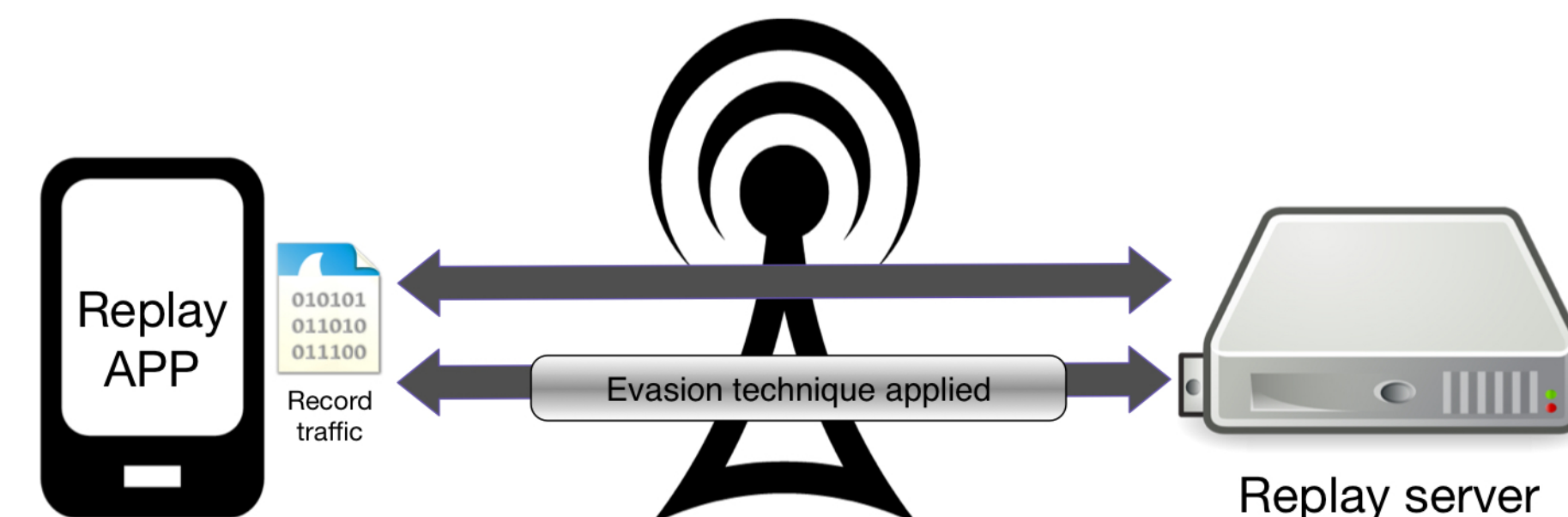
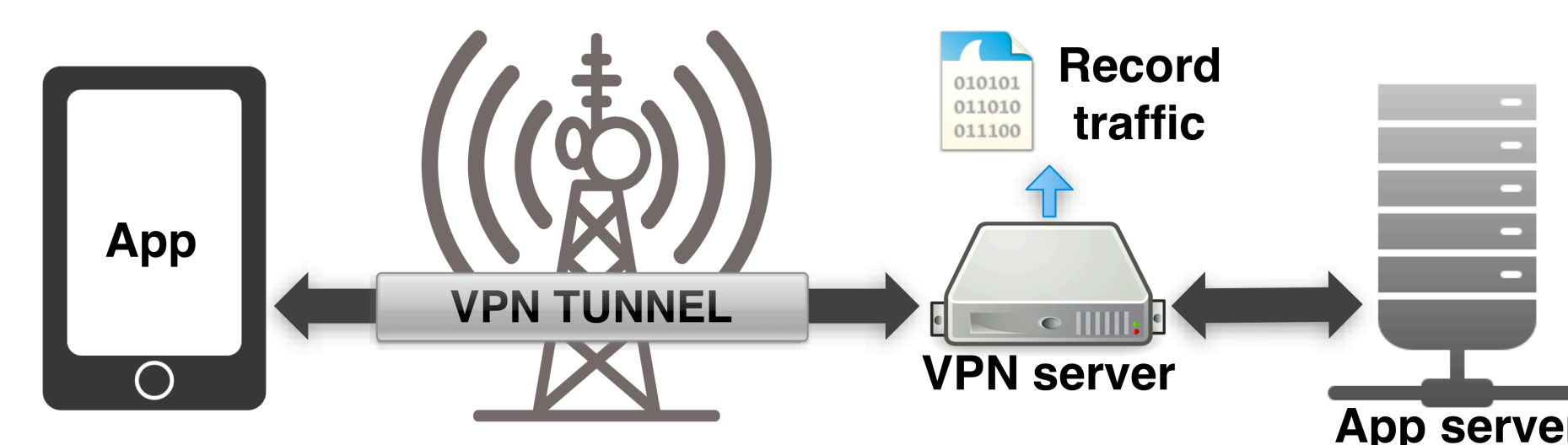


Video now streams FREE without using your data, only from T-Mobile.

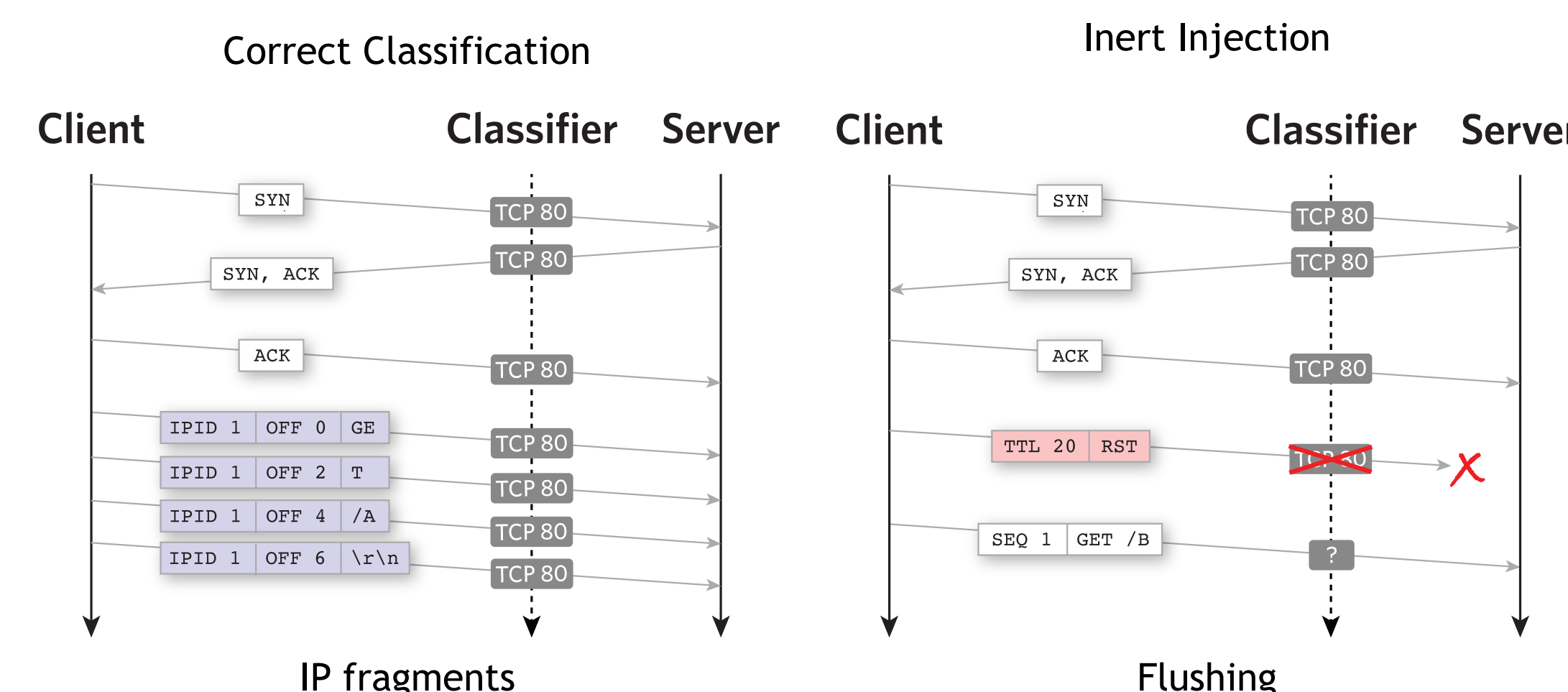
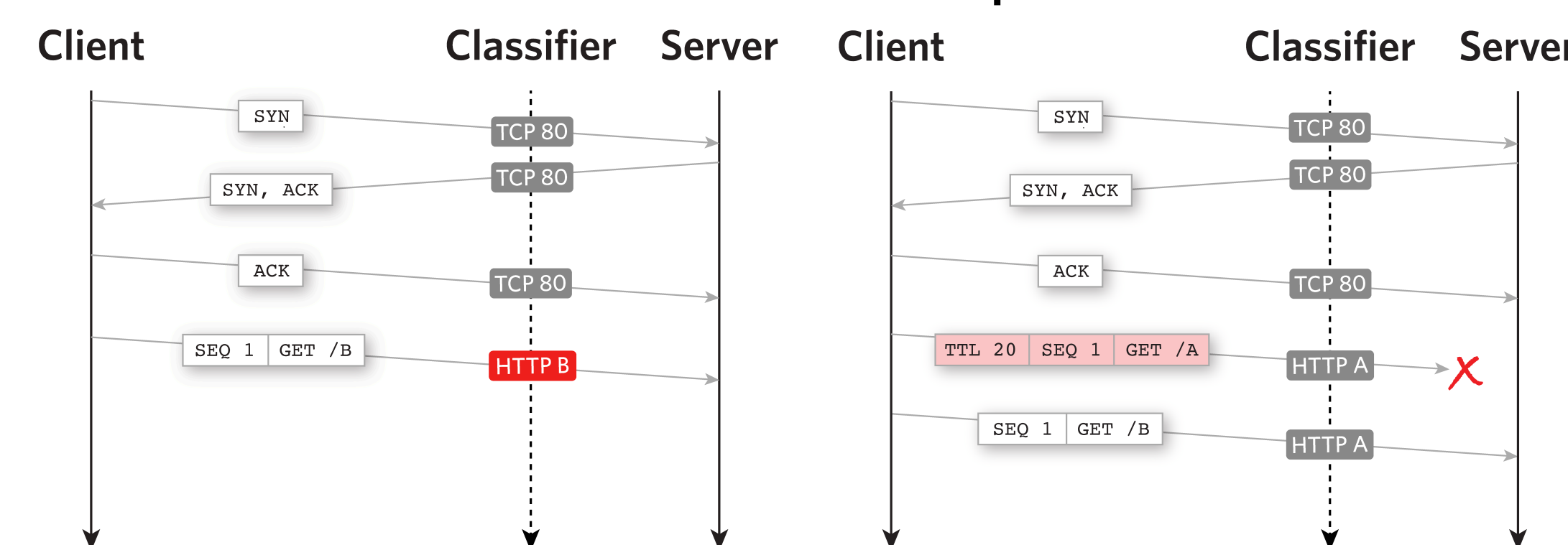


Design of liberate

Record and Replay



Evasion techniques



Results

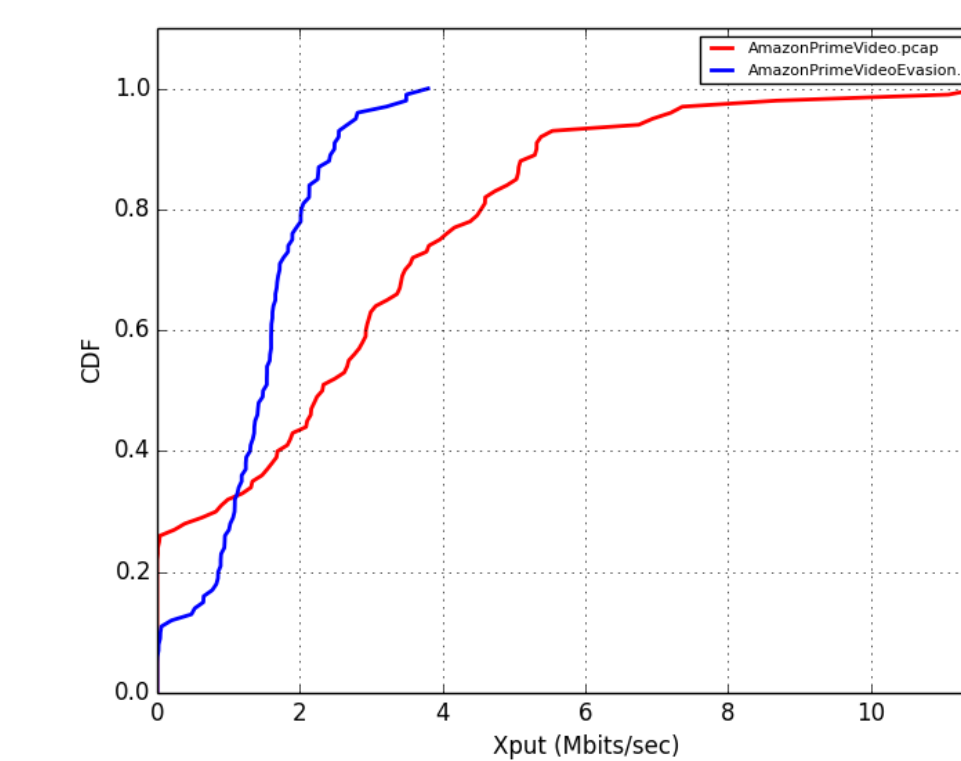
Traffic always identified by keywords inside the content, e.g., 'googlevideo'

T-Mobile

- Limited TTL, invalid header and breaking packets can circumvent

AT&T

- Change the server port from port 80 to any other port can circumvent



Iran

- Changing port or breaking packets can circumvent censorship

Future work

- Server side support
- Across platform (now only linux)
- A robust implementation
- A real-time monitoring platform