Vibphone: Device-Independent Eavesdropping via Built-in Accelerometer
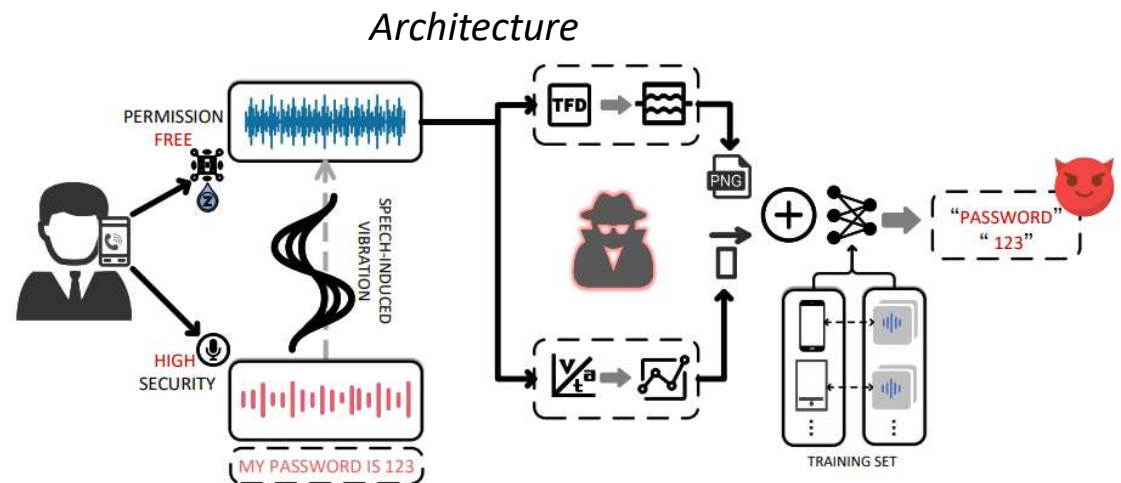
- **Motivation**
  - Zero-permission motion sensor
  - Accelerometer's sampling rate covers human voice band
  - Accelerometer is sensible to human voice
- **Design**
  - Pre-processing (FFT, filter, segmentation)
  - Feature Extraction
  - Adversarial Network
  - Recognition
- **Future work**
  - Cross-device authentication
  - Simultaneous eavesdropping on both sides.

Architecture

Prophet: Crowdsourcing-based Framework towards Improving Video Delivery in HSR
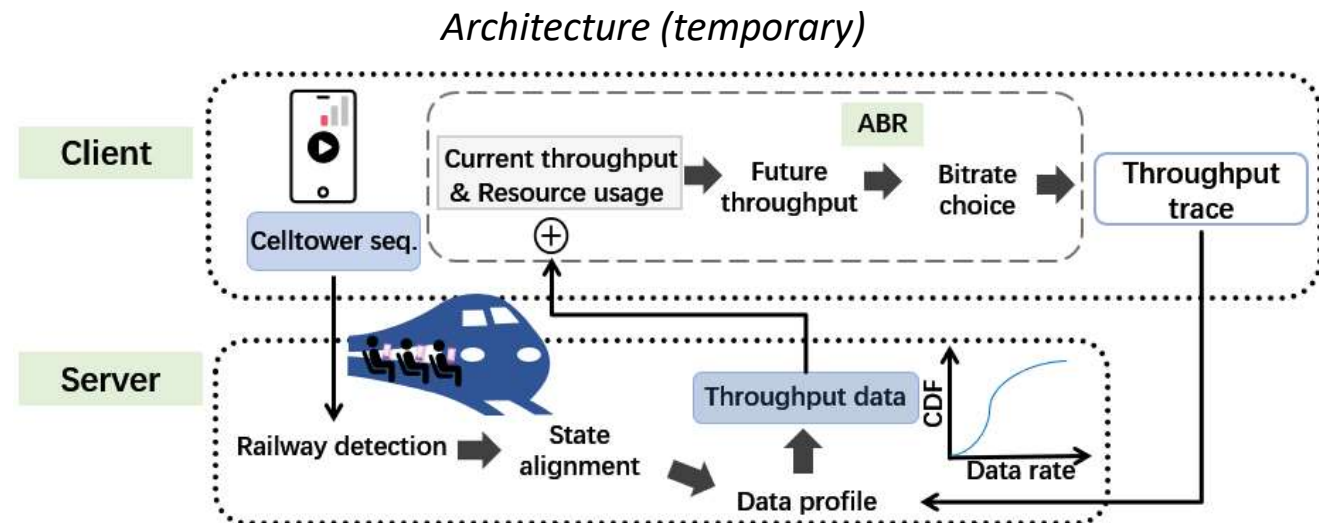
- **Motivation**
  - □ Reliable transmission between handovers
  - □ Spatial-temporal relation of throughput
  - □ Strict regulation on HSR arrival time
- **Design**
  - □ Historical information
  - □ Detect current status
  - □ Schedule downloads
- **Future work**
  - □ Live stream
  - □ 5G: smaller cells

Architecture (temporary)

EarSonar: Middle-Ear Effusion Detection with Earphone

- **Motivation**
  - Expensive & inconvenient medical diagnosis
  - Echo attenuation caused by effusion
  - Robust & imperceivable FMCW
- **Design**
  - Acoustic sensing
  - Sound path separation
  - MEE Detection
- **Future work**
  - Heartbeat (HCI)
  - Breath (Health care)

Architecture