Approach: Virtualized Wi-Fi

Previous work: FatVap, Juggler, and VirtualWiFi
- Promising results (~3x bandwidth) in static scenarios
- As we show, not suitable for mobile scenarios

Our Solution: Spider
- Virtualized Wi-Fi for high-speed mobile users
  - Manages AP discovery, lease acquisition, and channel scheduling while optimizing bandwidth

Evaluation:
- At low speeds, mobile users can recover from such throughput losses
- At high speeds, mobile users benefit from virtualized Wi-Fi only if APs are on the same channel

Key Research Question:
How can a truly mobile user best utilize a dense deployment of Wi-Fi APs?

DHCP Problems for mobile virtualized Wi-Fi
- Relatively slow process
- No support for power-save mode
- Client must dwell on channel until gets the lease
- Dwell times can lead to TCP timeouts and lower throughput

Dividing Speed: 10 m/s (~22 mph)