

# Towards Stealth Networks

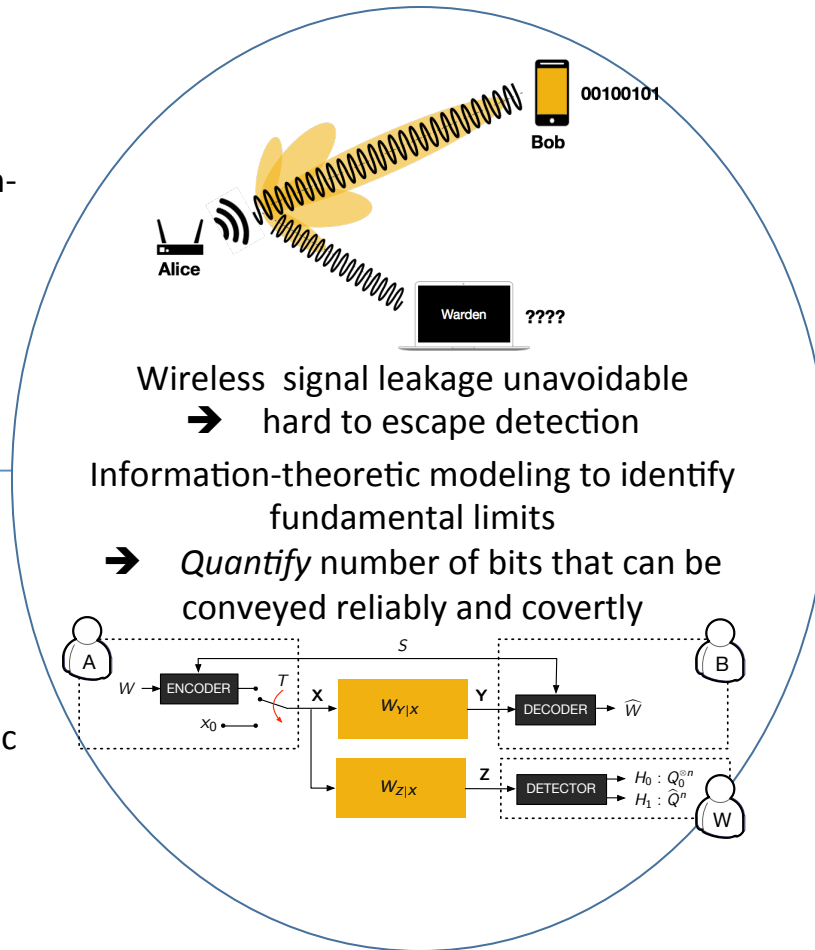
## Fundamental Limits and Algorithms for Stealth Communications

### Challenge:

- Characterized information-theoretic limits of covert communications
- Develop provably undetectable communication schemes

### Solution:

- Exploit low-weight codebooks, with codeword weight scaling a *square root* of block length
- Exploit information-theoretic techniques to control channel output statistics



### Scientific Impact:

- New insights into design of schemes with low probability of detection, potentially *without* share secrets
- Highlights dual role of error-control codes, to ensure reliability and *shape* statistics of transmitted waveforms

### Broader Impact:

- New techniques to avoid detection by monitoring entities
- Applications to spectrum sharing by designing undetectable secondary users

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