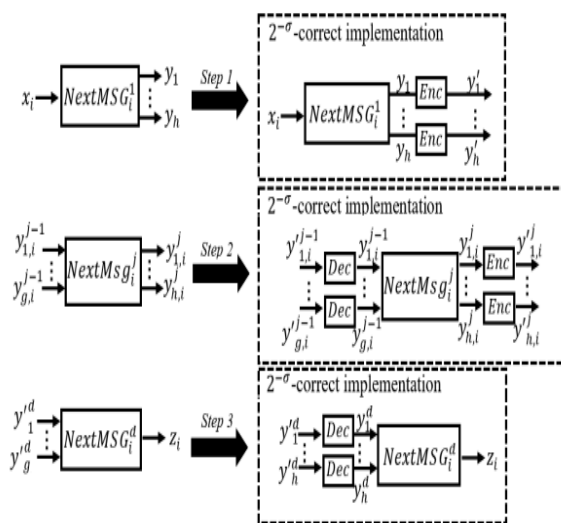# Cryptography and Communication Complexity

Challenge:

- Can we build cryptographic schemes that are efficient both computationally and with respect to communication?
- Can we do so in a way that guarantees security from well-studied assumptions?

Solution:

- New approaches to zero-knowledge proofs and secure computation based on well-studied assumptions.

Scientific Impact:

- The need for cryptographic functions that are efficient is ubiquitous.
- New techniques give new insight into how security can be obtained.

Broader Impact:

- Crypto techniques can enable broad array of security applications.
- Training of graduate and undergraduate students in advanced cryptographic techniques.