Problem: Un-trusted Networked Storage Provider.
The total cost of ownership of storage is 5-10 times greater than the hardware costs. This drives an increasing trend to off-load data management to outside specialized providers. In such settings it is essential to provide assurances of confidentiality, correctness and access privacy to data clients.

Develop strongly secure mechanisms for data access with privacy and correctness. Deploy secure hardware whenever available to achieve higher throughputs.

Is existing work practical?
Existing PIR mechanisms are orders of magnitude slower than transferring the entire data to the client. (NDSS 2007)

First practical protocol
Design novel mechanisms that deliver practical transaction rates (orders of magnitude faster) over large data sets. (NDSS 2008)