

## Verifiable Secure Computation of Large Scale Two-Point Boundary Value Problems Using Certificate Validation

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**Abstract :** Scientific computation outsourcing is gaining popularity because it allows customers with limited computing resources and storage devices to outsource complex computation workloads to more powerful service providers. However, it raises some security and privacy concerns and challenges, such as customer input and output privacy, as well as cloud cheating behaviors. This study was motivated by these concerns and focused on privacy-preserving Two-Point Boundary Value Problems (BVP) as a common and realistic instance for verifiable safe multiparty computing. We'll look at the safe and verifiable schema with correctness guarantees by utilizing standard multiparty approaches to compute the result of a computation and then solely using verifiable ways to check that the result was right.

**Keywords :** verifiable computing, cloud computing, secure and privacy BVP, secure computation outsourcing

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