

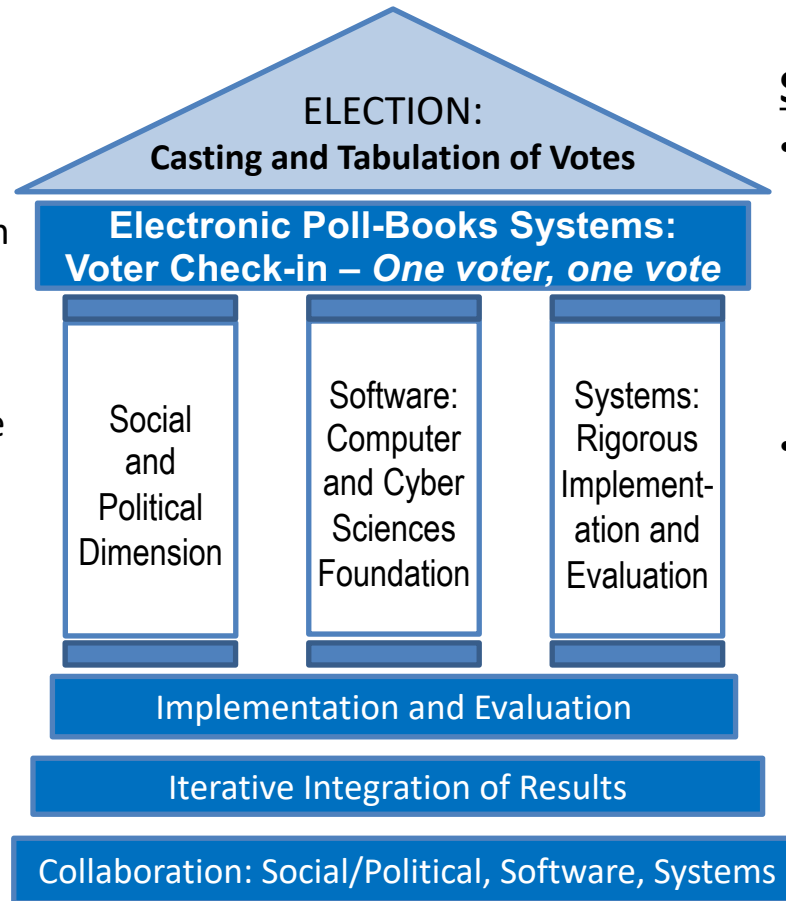
A Robust Framework with Rigorous Semantics and Security Guarantees for Election-Day Voter Check-in

Challenge:

- How to guarantee **“One voter, one vote”**
- Research on election systems slights voter check-in problem
- Commercial e-pollbook systems are inadequate
- **Voter check-in systems** must be robust, dynamic, auditable and secure

Solution:

- Research and prototype a check-in system with **“one voter, one vote”** guarantee
- Ensure correctness, security, fault-tolerance, and performance



This project pursues the first comprehensive research approach to solving the election-day voter check-in problem.

This work complements research on election systems that focuses on the vote tabulation problems and election audits.

Scientific Impact:

- New integrated approach to dynamic distributed systems, human-assisted computing, intrusion detection, fault isolation, and auditability for electronic pollbooks
- Motivate additional research on electronic election systems

Broader Impact and Broader Participation:

- Robust and auditable voter check-in guaranteeing **“One voter, one vote”**
- Development of a reference implementation
- Include inputs from, and analysis of surveys of voters and election officials
- Involve voters, poll workers, and students in evaluation

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