

Cryptography, Security, Privacy Research (CrySPR) Lab

Roopa Vishwanathan

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New Mexico State University

Research Highlights

- Research area: Cryptography, applied and theory, blockchain-based services, payment channel networks
- Members:
 - Current: 2 Ph.D. students, Kartick Kolachala, Mohammed Ababneh
 - Past: 3 M.S. students
 - Undergrad students: **welcome!**
- Funding: 2 active grants (NSF, DoE), 1 completed
- Scholarly Publications: Over the last 5 years, 13 peer-reviewed publications
- Teaching:
 - Fall: CS 380 “Intro to Cryptography”
 - Spring: CS 478 “Computer Security”
 - Occasional: CS 479: “Advanced Cryptography”



Representative Recent Grants (ongoing and completed projects)

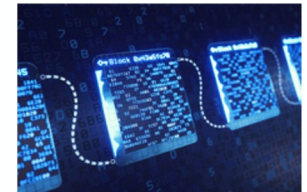
- CRII: SaTC: Automated Proof Construction and Verification for Attribute-based Cryptography, PI Vishwanathan, \$174K, 8/17-8/21
- NSF RINGS: RINGS: Resilient Edge Ecosystem for Collaborative and Trustworthy Disaster Response (REsCue), PI: Misra, Co-PI: Vishwanathan, Tourani, Mtibaaa, Mitchell, 5/22-4/25, \$1,000,000.00
- Building a federated learning framework for trustworthy and resilient energy internet of things (eloT) infrastructure. U.S. DoE, PI: Misra Co-PI: Vishwanathan, Wang, Reynolds, \$750K, 1/23-12/25



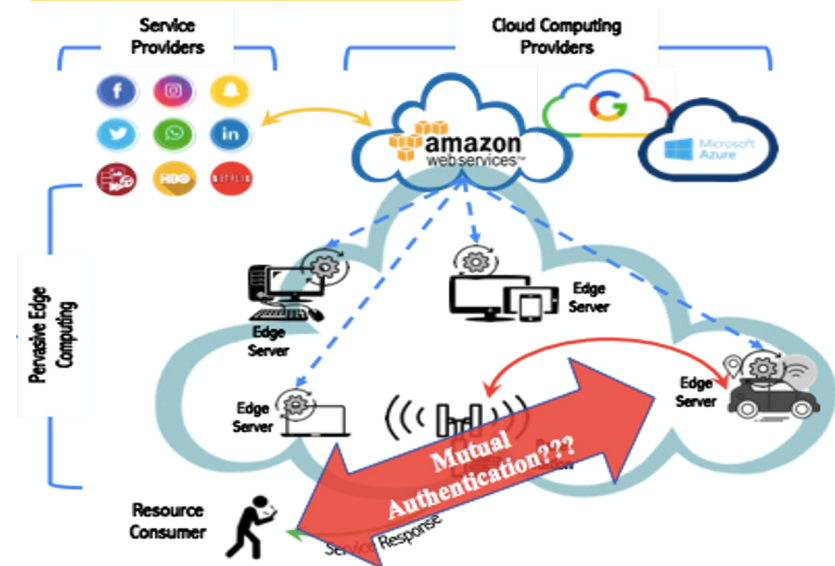
Recent Research Highlights – Roopa Vishwanathan

- Blockchain rewrites: ReTRACe, Cryptographic protocol design: RCHET, RFAME (ACM SACMAT'21)
- Applied crypto for blockchain-enabled services: pervasive edge computing (ACM CCS'21)

Blockchains used as append only ledger for financial transactions



New use cases for BC with messages containing data records being shared on BC



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Contact Information

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