



Faculty Candidate Seminar

February 20, 2026

10:00 – 11:15 am – Room: Boyd 306



Security in Translation: From Standards to Practice

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Abstract:

Security failures persist across a wide range of systems, from everyday websites to critical infrastructures, despite decades of technical advances and detailed security guidance. While standards, regulations, and design principles aim to specify how systems should be secured, these mechanisms often fall short not because guidance is absent, but because it does not translate cleanly into real-world practice. Across domains, human judgment, organizational constraints, and operational realities reshape how security guidance is interpreted and applied, creating persistent gaps between intended protection and actual outcomes.

This talk examines why such translation gaps arise and how they can be systematically addressed. By combining empirical studies with technical analysis, my research shows how assumptions embedded in security guidance break down when they encounter real incentives, adversarial behavior, and operational constraints. Through qualitative analysis, I uncover why security requirements diverge from risk reduction in practice, revealing why guidance may fail to deliver effective protection. Complementing this perspective, through large-scale, data-driven analysis, I identify previously overlooked gaps in how threat models are considered, demonstrating how empirical evidence can be used to refine security guidance and better align it with real-world constraints. More broadly, my analyses of security implementation have offered key insights applicable to growing technical domains, where fixed assumptions and static guidance increasingly struggle to keep pace with real-world systems.

Biography:

Sena Sahin is a Ph.D. candidate in the School of Cybersecurity and Privacy at the Georgia Institute of Technology, where she is a member of the Better Empirically Established Security lab. Advised by Frank Li, her research lies at the intersection of human factors and cybersecurity. She studies how cybersecurity guidance translates into real-world protection, where and why this translation breaks down, and how it can be systematically improved. Her work employs empirical and socio-technical approaches to strengthen security standards and assurance in practice. She publishes in leading security venues, including IEEE S&P, ACM CCS, and NDSS, and her research has received a Distinguished Paper Award at CCS. She previously earned an M.S. in Computer Science from Georgia Tech.