



Systems and Internet Infrastructure Security

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NSF SaTC Panel

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Q1: What will be biggest security/privacy research problems be in 2029?

- The history of security has be impacted by one tectonic movement after another, so we are always dealing with a moving target.
 - ▶ internet, high-speed, mobility, cloud are revolutions in themselves
- What are the next revolutions going to be?
 - ▶ security aware hardware
 - ▶ near infinite bandwidth, computational capacity and mobility
 - ▶ human augmentation by computation (glasses, exo-skeletons, ...)
 - ▶ public policy
 - ▶ software liability and compliance

Old science

- We are going to get better at computer science
 - ▶ the fundamentals will stay the same
 - ▶ security is the “killer app” for source code analysis, testing, ...
 - ▶ crypto is going to get better, continue the never ending cycle of finding algorithms, then breaking them and starting over
 - ▶ systems papers that don't address security will not be acceptable
 - ▶ keep working on measurement

(2) which of the things we're working on today will/should become irrelevant by 2029? will any of them become irrelevant because security "wins"?

- Hard to say, unclear what “wins” even mean
 - ▶ Need to think less about winning and more about limiting impacts
- That being said: I think we will move away from a world in which the security community spends so much time breaking commercial systems (industry will become more disciplined due to PR and liability concerns)

(0) Will there be a "SaTC 2029" (or comparable) meeting?

- Yes, but it will look different.
 - ▶ I hope we will have more people who don't refer to themselves strictly as security folks.
 - ▶ Diversification of community will continue into all areas of human endeavor
 - **Now**: ethics, social sciences, environment, public policy, etc.

** (1) Which of the "out-there" research ideas today have a shot to become widely adopted over the next 15 years?

- idea that needs to take hold : *least feature systems*
 - ▶ much of security problems or born out of unused features and interfaces
 - ▶ custom build of operating systems/hardware and applications to reduce what they will do and can do
 - ▶ foreshadowing : agile systems

- Moving away from maximally capable systems

Thank You!!!



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