REU Project Overview: Informing Guessing Attacks on Publicly Performed Secrets
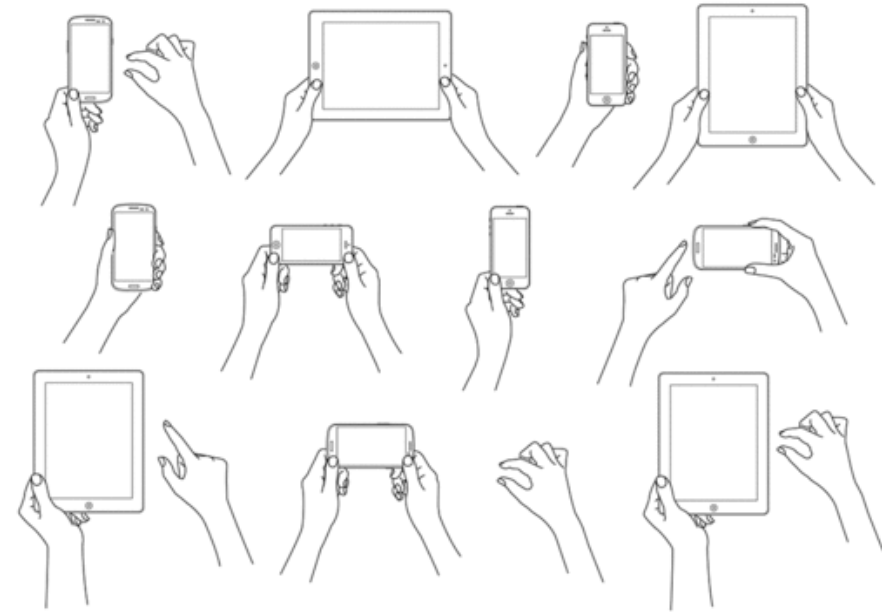
Laura South

Research Mentors: Dr. Janne Lindqvist and Gradeigh Clark

Mobile Authentication

- Mobile authentication differs from traditional authentication
  - Performed frequently
  - Triggered by external stimuli
  - Often conducted in public

- Opportunity for information leakage
  - Smudge attacks
  - Thermal camera-based attacks
  - Shoulder surfing attacks
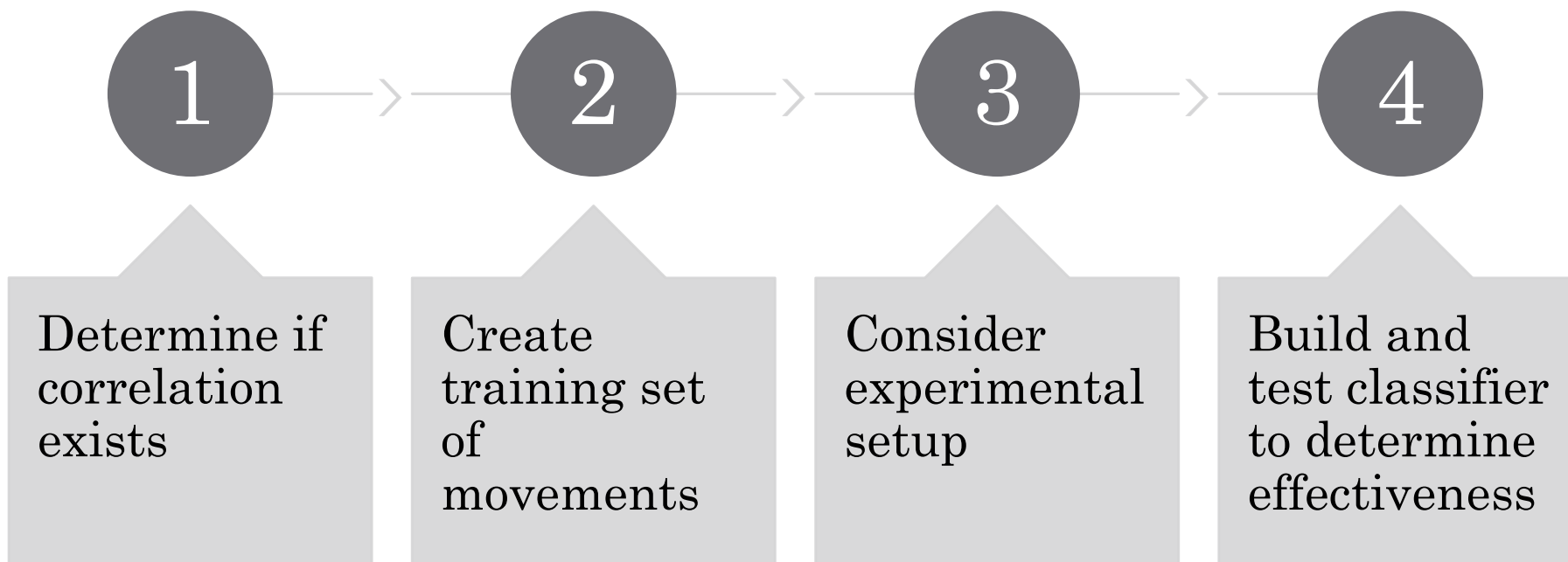
Password cracking

- In a traditional system, guessing attacks are most effective offline
  - No restrictions on number of attempts

- But mobile authentication systems often have this restriction, so offline attacks are impossible
  - Different strategy is necessary

- Information leakage
  - Use information gained from publicly performed secrets to improve guessing strategy

Project Description

- Can enough information be obtained from shoulder surfing to significantly improve the guessing attack?

- If so, can an automated version of the shoulder surfing attack be created and utilized by attackers?

Process

Acknowledgements