Fingerprint Presentation Attack Detection: Generalization and Efficiency

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Proposed Approach

- **Generalization**
  - Investigated material characteristics and 3D t-SNE CNN feature embeddings
  - Identified a subset of representative PA materials to train a robust spoof detector

- **Efficiency**
  - Quantization of CNN model for byte computations instead of floating-point
  - Minutiae clustering followed by weighted score fusion to reduce redundant computations
Key Findings

Identified a subset of 6 materials that are essential to train a robust spoof detector

Developed an efficient spoof detector that can perform spoof detection in less than 100ms on a commodity smartphone

Check out the live demo at Poster #2 😊