PUTTING YOUR PASSWORDS ON SELF DESTRUCT MODE
BEATING PASSWORD FATIGUE

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Beating Password Fatigue

Problem: We are simply storing more passwords than we really need or are capable of dealing with.

(Proposed) Solution: A method that enables users to get passwords that are worthy of temporary using, but not quite worthy of preserving.
Shifting Towards Ephemerality

Good Luck, Mr. Hunt

This *message* will self destruct in 5 seconds

Self destruction sequence initiated
Shifting Towards Password Ephemerality

Good Luck, Mr. Hunt

This password will self destruct in 5 seconds

Self destruction sequence initiated

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Achieving Password Ephemerality
A Lightweight Scheme

Ephemeral Password Release and Consumption
A Lightweight Architecture

Wearable Device
- Wearable Sensor Service
  - Sensor Data
  - User Activity
- SAMBA (periphery)
- Wearable platform/OS

Mobile phone
- Mobile Sensor Service
  - Sensor Data
  - User Activity
- (Primary) SAMBA
  - Registration
  - SAMBA
  - Pwd Release
  - Handshake
- 3rd Apps
- Message API
- Libraries
- Data API

Websites

Bluetooth

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The SAMBA Method

Or **Synthetic Aperture Multimodal Biometrics**

Authentication method

Borrows, by analogy, the “synthetic aperture” technique used in radio/optical astronomy.

Fuses small and overlapping biometric samples to efficiently verify a user’s identity

This method is as accurate as the union of its inputs

Converts fused matching scores into confidence scores (probability)
Releasing ephemeral passwords is difficult:
The biggest issue is adoption

Consequently, we provide a wrapper mechanism that works with existing authentication infrastructures

• Based on self-service password reset
• Naive approach (additional work is needed)

**Rationale:** It avoids a complete overhaul of Websites’ cryptography systems to support our solution.
Design principles behind Our Solution
Design Principles

• Fusion of multiple modalities of Biometrics.
  • “Synthetic aperture” needs many biometric samples with overlapping properties in order to be successful.

• Efficient match & non-match identity determination.
  • Small & overlapping biometric samples can be fused quickly

• Support future innovation of biometrics.
  • Smooth inclusion of new types of biometric data.
What this means for Users

- Right to control their passwords lifetime
- Safeguard in place to protect information
- Simpler User Experience (3 steps)
- Less password fatigue (no password management)
Looking ahead

Build proof of concept of SAMBA System.

Design a better handshake between SAMBA and target Websites

Perform control experiments to evaluate SAMBA’s new user experience

Performance evaluation of SAMBA method
Examined the concept of ephemeral content and discuss how it relates to password management and password fatigue.

Presented SAMBA, our proposal to ephemeral passwords to combat password fatigue.

Combines our SAMBA method with a lightweight scheme and architecture for ephemeral password release & consumption.
Questions:

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