

FIRMA: Personalized Cross-Layer Continuous Authentication



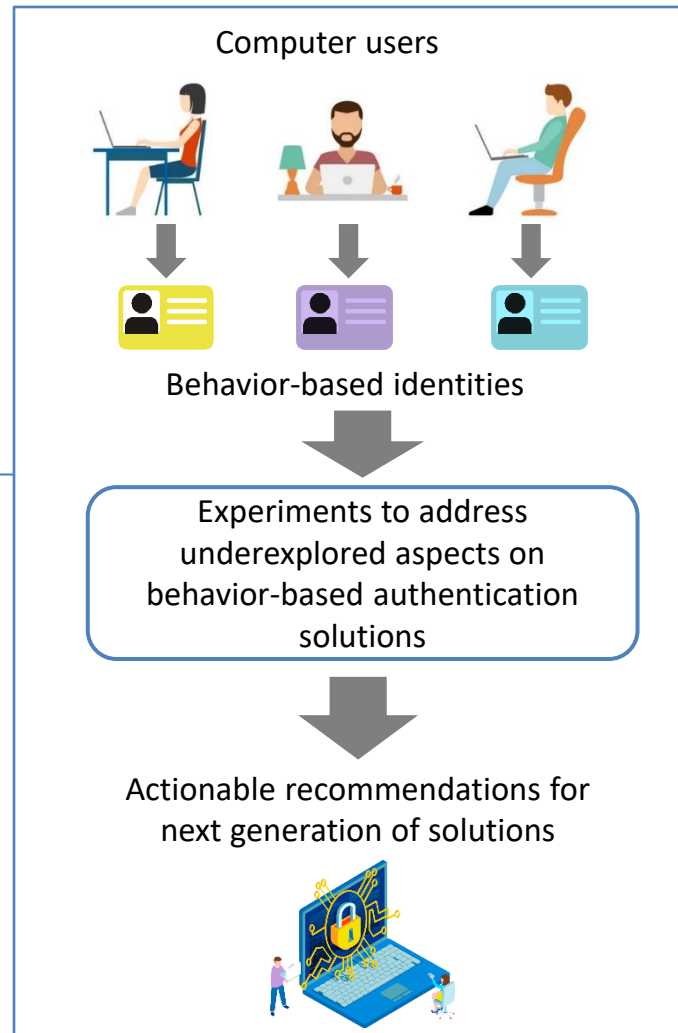
Challenges:

- To construct a personalized behavior-based digital identity for computer users based on their computer usage habits.
- To automatically identify computer users based on their behavior-based identity, complementing traditional authentication schemes such as passwords.

Solution:

- Construct unique digital identities for 31 computer users using ecologically-valid usage data collected over 8 weeks.
- Combine users' network traffic, process activity, mouse clicks, and keystroke dynamics to construct their identity.
- Use online machine learning models (which allow for periodical retraining) to automatically recognize computer users based on their behavior-based identity.

Project #: 1814557
Institution: University of Florida
PI: Dr. Renato Figueiredo
Co-PI: Dr. Dapeng Wu
Email: renatof@ufl.edu



Scientific Impact:

- We identified user identity and user recognition approaches that can potentially contribute for the design of behavior-based continuous authentication solutions that will be more feasible for corporate environments and robust to temporal changes in computer usage habits.
- One journal paper (under review).
- All artifacts created in this project will be made available for vetted research usage.

Broader Impact and Broader Participation:

- Can potentially benefit our society by creating a safer environment for computer users, mainly inside corporate environments.
- Can potentially translate into practice inside organizations (in both the public and private sectors) where computer usage data is often recorded from employees.