

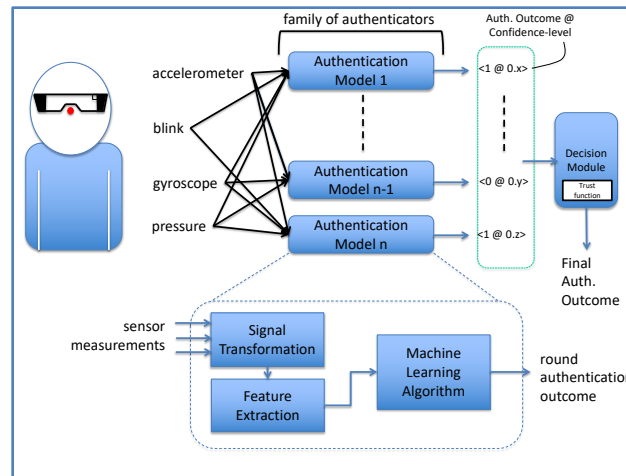
# A Suite of Authentication Solutions for Individuals with Upper Extremity Impairment

## Challenge:

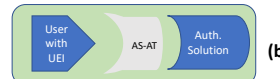
- In this new project, we will study and authentication solutions for people with **upper-extremity impairment (UEI)**.
- The presence of UEI restricts the type of authentication solutions one can use
- It presents unique threats to the authentication process itself

## Solution:

- We are developing a suite of authentication solutions (called **AssistiveAuth**) based on the notions from *ability-based design*.
- We plan to develop several solutions that leverage popular assistive technologies to collect novel behaviors for authentication.
  - E.g., ballistocardiogram, blink-patterns, pressure-patterns etc.



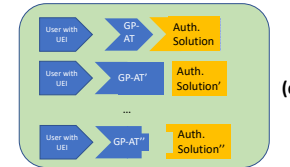
**Current state:** Mismatch between ability assumption of extant authentication solutions and people with UEI



**Common approach:** Authentication-specific AT (AS-AT) to bridge the assumption gap. Solutions proposed often result in mismatch in bridging the gap



**Our approach (idea):** Using general-purpose AT (GP-AT) but new authentication solutions that match the AT



**AssistiveAuth:** Developing a suite of authentication solutions to match the GP-ATs used by people with UEI

## Scientific Impact:

- The project will develop novel authentication solutions for a largely ignored population, people with Upper Extremity Impairment (UEI).
- The project will improve the understanding of the cybersecurity community with regard to the authentication needs of people with UEI.

## Broader Impact:

- This project will develop methods for understanding/developing authentication solutions for vulnerable populations
- If successful, the resulting innovations that can be readily generalized to the larger population & commercialized
- This project will lead to new course modules, at both undergrad and graduate levels and a Hackathon for generating interest in this research area locally.