# Probing Fairness of Ocular Biometrics Methods Across Demographic Variations
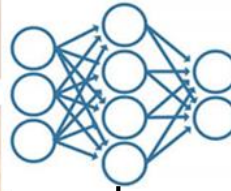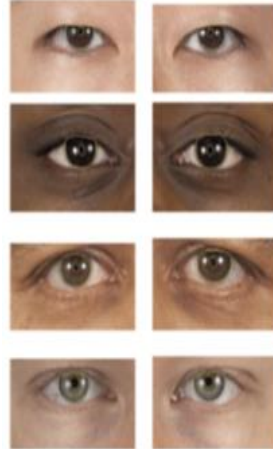
## Challenge:

- Existing research suggest demographic **bias** of facial technology
- There is a **pressing** need to investigate and develop fair biometric technology
- Ocular biometric is an **alternate** solution to facial biometrics
- The aim of this project is to investigate **fairness** of ocular biometrics

**Ocular-based user recognition**

**Equitable performance**

## Scientific Impact:

- Development of novel solutions towards **trustworthy**, equitable and secure biometric systems for end-users and law enforcement
- The publicly available tools and methods could be used for understanding and mitigating bias of any AI-based application

## Solution:

- Thorough **evaluation** of ocular biometrics across race, gender and age over face.
- **Explainable AI** for cause and effect analysis
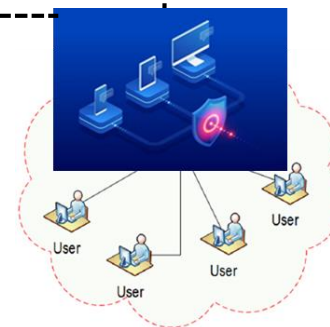- Development of fairness-aware models for bias **mitigation**

**Methods to mitigate bias**
- **Fairness-aware loss functions**
- **Patch-based classifiers,**
- **Gender/ race specific models**

**Secure and trustworthy technology**

## Broader Impact and Broader Participation:

- Equitable biometric technology is especially required for **law enforcement** and end users
- **Policy makers**, stakeholders and tech giants will be engaged
- **Workshops** and conferences on fairness of AI will be organized
- Females and undergrads in STEM will be trained

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