Increasing students' awareness of diversity, equity, and inclusion through a random signals and noise class

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Introduction: ABET proposed an optional pilot general criteria regarding curriculum for accrediting engineering programs, requiring all engineering programs to include curriculum content that ensures awareness of diversity, equity, and inclusion for professional practice consistent with the institution's mission.
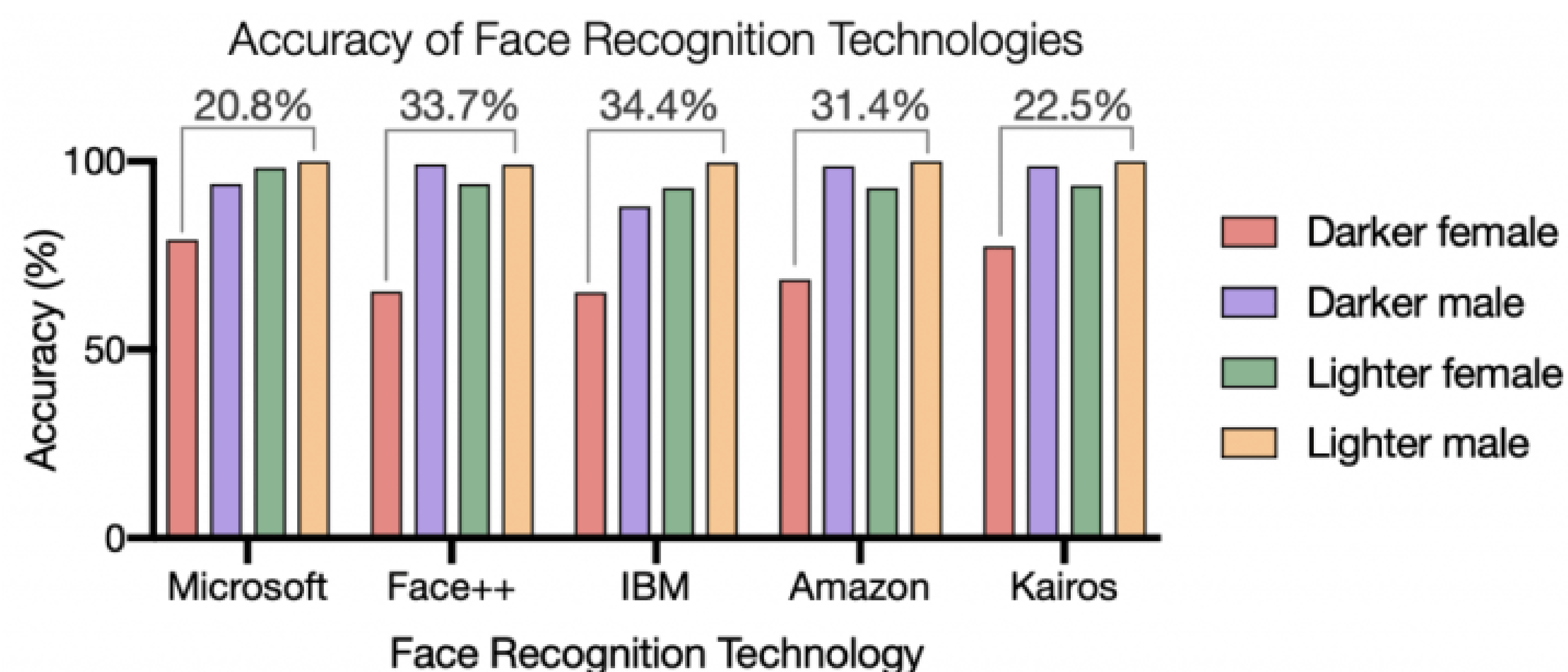
Example 1: For discussions on topics related to joint and marginal probability, and equity issues in AI technology – "Racial Discrimination in Face Recognition Tech"

https://sitn.hms.harvard.edu/flash/2020/racial-discrimination-in-face-recognition-technology/
http://gendershades.org/overview.html

Example 2: For discussions on topics related to statistical analysis in digital health and experimental design for better inclusion –"Devices that help people with hand tremor"

www.gyenno.com
https://www.amazon.com/GYENNO-Parkinson-Spoon-Fork-Set/dp/B0CNP63NJM

The Gender Shades project evaluates the accuracy of AI powered gender classification products.

This evaluation focuses on gender classification as a motivating example to show the need for increased transparency in the performance of any AI products and services that focused on human subjects. Bias in this context is defined as having practical differences in gender classification error rates between groups.

Gender Shades

Accuracy of Face Recognition Technologies
20.8% 33.7% 34.4% 31.4% 22.5%

- Darker female
- Darker male
- Lighter female
- Lighter male

Face Recognition Technology: Microsoft, Face++, IBM, Amazon, Kairos

Incredible Tremor Assistance

Know You Better than Yourself

Customized Medication Record

Quantified Tremor Data
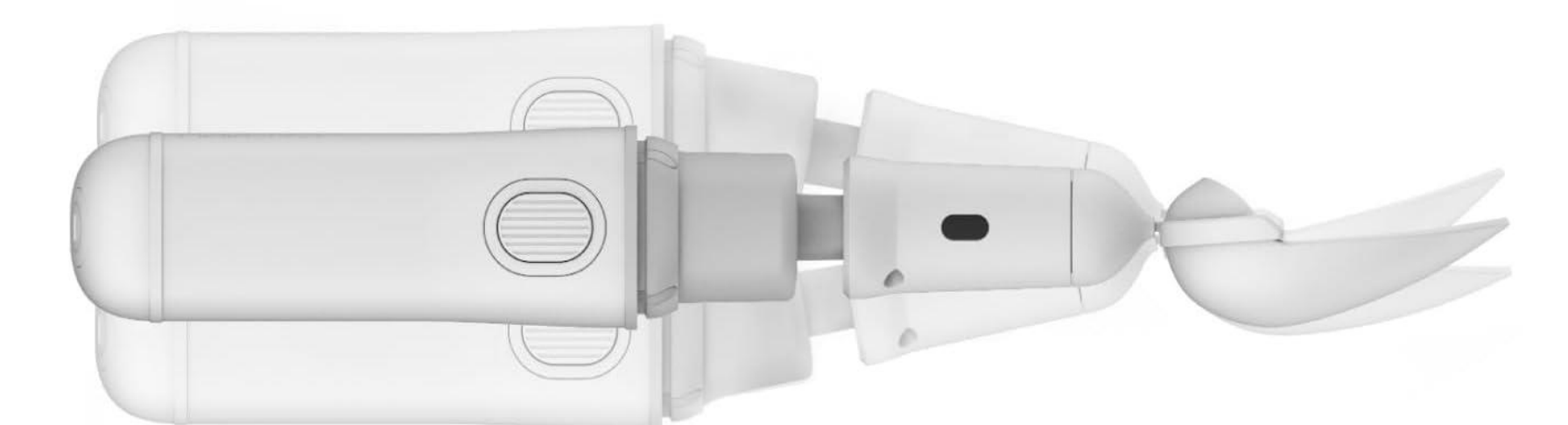
Visual Tremor Trends

Bravo Twist 2023-05-19
Hand Tremors
Frequency(Hz)
Amplitude (mm)

Real-Time Motion Perception → Self-Adaptive Active Stabilizing

Retain Dignity with Technology

High Precision Motor
Tri-axis Linkage System
Intelligent Servo System
Up to 85% self-adaptive tremor offset