

Human Behavior Recognition (Startup Business Idea)

Who we are:

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1

Outline

- **What is Human Behavior Recognition (HBR)**
- **Why HBR is Important in Daily Life**
- **What We Offer**
- **System Pipeline**
- **Objectives**



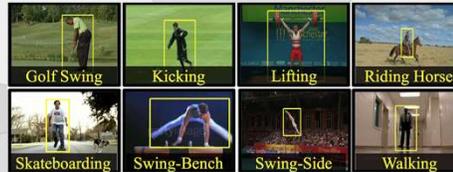
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2

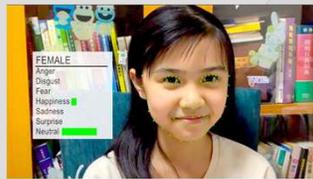
What is Human Behavior Recognition (HBR)

- Human behavior recognition (HBR) technology focused on identifying the communal intention through digital means
- AI algorithms can detect action, emotion and crowd anomaly (e.g., face mask)

Human Action Recognition



Human Emotion Classification



Face Mask Detection



3

3

Why HBR is Important in Daily Life

Application Area

- **Surveillance**
Classroom monitoring, Detect negative activity in train station
- **Health care**
Patient monitoring and improving efficiency
- **Customer feedback**
Automatic collection emotional feedbacks



4

4

What We Offer

- We aimed to provide **automated systems** for human behavior recognition using **artificial intelligent (AI) algorithms**
- **Human action recognition** (graph convolution network [1,2])
- **Human emotion classification** (convolution neural networks [3, 4])
- **Face mask detection** (convolution neural networks [5])

[1] Shahid, A.R., Yan, H. (2021). Skeleton-Based Action Recognition with Adaptive and Self-Attentive Graph Convolution Network (*Under Review*)
 [2] Shahid, A.R., Fan, X., Yan, H. (2021). View-adaption Graph Neural Network For Action Recognition (*Working Paper*)
 [3] Shahid, A. R, Yan, H Contour and region harmonic features for sub-local facial expression recognition. Journal of Visual Communication and Image Representation
 [4] Fan, X. Shahid, A.R., Yan, H (2021). Hierarchical Scale Convolutional Neural Network For Facial Expression Recognition. (*Under Review*)
 [5] Fan, X, *RetinaFaceMask: A single shot face mask detector (Under Review)*



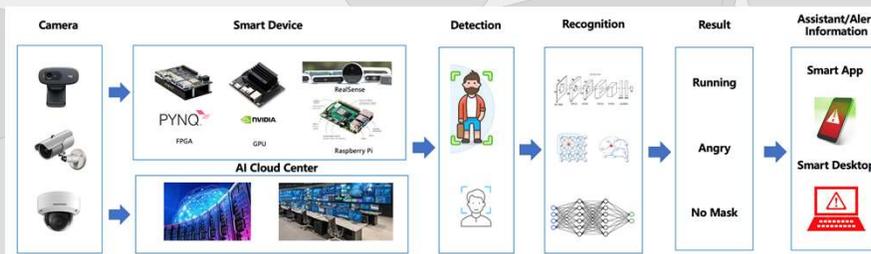
5

5

System Pipeline

Human Behavior Recognition (HBR) System

- Perception (surveillance, common camera)
- Computing equipment (smart device, AI cloud center)
- Detection, and recognition
- Assistant/ Alert message



6

6

Our Objectives

- The real-time solutions for business, care and research community
- Designing prototypes
- Solution on demand (like classroom monitoring system etc.)
- Raising start up funds & Commercialization




7

Join Us

- We are seeking for people with the following backgrounds, but not limited. Please feel free to approach us, if you are motivated.
- Background in computer vision, image processing, deep learning and machine learning
- Background in internet of things, embedded systems, computer networks ...
- Background in human behaviour, psychology ...
- Background in management, business, human resources, law ..



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8

Thank You



CamTree



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9