PATH PARTNER

Audience Classification & Measurement (ACM)

What Audience Classification & Measurement solution does?

Computer vision based Audience Classification & Measurement algorithm counts the audience in different classes based on gender and age. The camera kept on top captures the viewers image and underlying algorithm estimates the age & gender for each individual viewer in the captured image. The algorithm is developed and optimized for Qualcomm Snapdragon platform.

How Audience classification detects Gender?

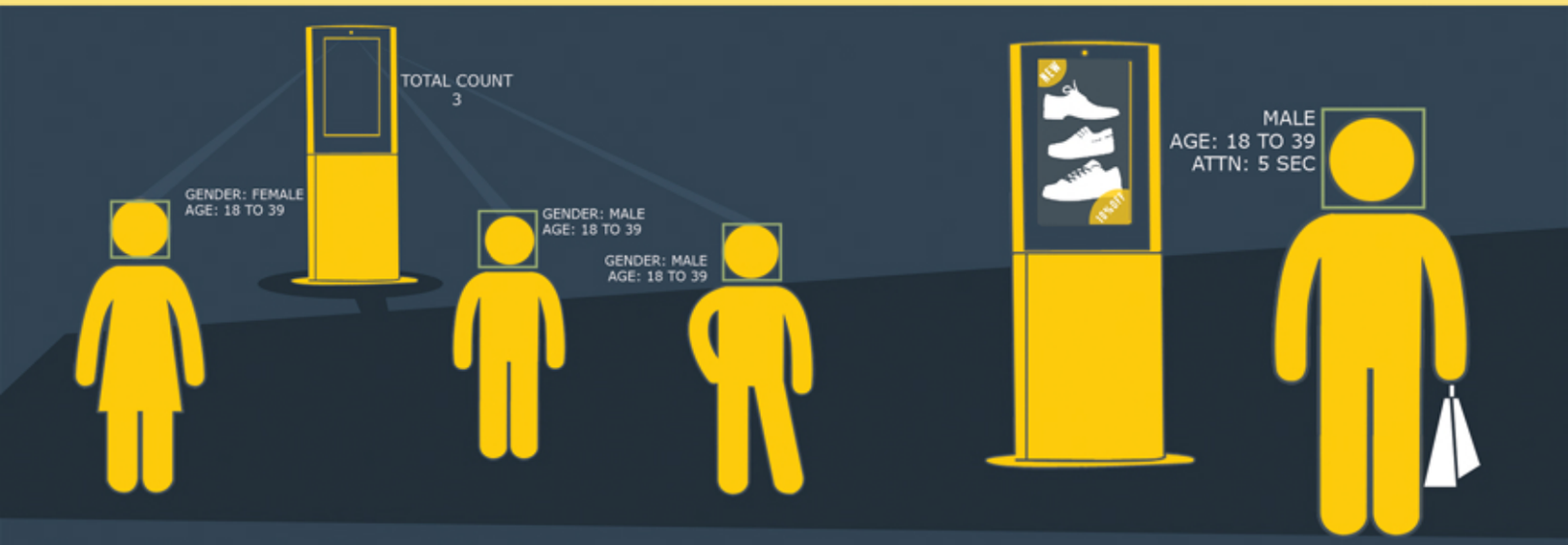
- Face detection using Snapdragon SDK
- Detect facial landmarks (eyes, nose, lip co-ordinates etc.,)
- Feature extraction using LDP
- Dimensionality reduction using LDA/PCA
- SVM Classifier for differentiating Male & Female

How Audience classification detects Age?

- Algorithms that estimates a person's age are based on features derived from his/her face image
- Cranial Ratios - find the cross ratios from the face feature co-ordinates
- Feature extraction using LBP & LGBP
- Dimensionality reduction using PCA
- SVM Classifier for differentiating Adult age groups

Key Features:

- Provides total audience count for each class at any given point of time
- Gender detection of each person
- Age group classification for each person (Adult, Middle Age and Senior Age)



Target Applications/Markets:

- Audience profile for Digital Signage
- Retail Analytics
- Target Advertising
- Vending Machine with age verification camera
- Security & Surveillance

PathPartner Expertise:

- **Embedded Vision Algorithm Development**
  - Vision algorithm research and analysis
  - PC prototyping using Octave, OpenCV and MATLAB
  - Algorithm porting and optimization on target platform
- **Embedded Vision Application Development**
  - Consumer – Audience Classification & Measurement, Gesture based control for media player, Object Recognition, People counting application etc.,
  - Surveillance – Scene Change/Tamper Detection, Object detection and tracking etc.,
  - Automotive – Driver Drowsiness Detection, Back Over Prevention etc.,
- **Experience in developing, porting and optimizing various vision algorithms/ kernels in embedded platforms like DSP, HW Accelerators, ARM and SoCs**
  - Harris Score, Kalman Filtering, HoG, Gaussian & Laplacian Filtering, NMS, Canny Edge Detection ,Back ground Subtraction, Image enhancement Algorithms etc.,
  - Face Detection, Gender Detection, Age Classification, Homography Estimation, Tamper Detection, Gesture Recognition etc.,

Embedded Platforms:

- ARM – Cortex A8/A9/A15
- DSP – Qualcomm Hexagon, TI's C64x+, C674x, C66x
- DM355 & DM365/8, DM648
- DM814x, DM385, DM8127, OMAP4x, Qualcomm Snapdragon
- Co-Processors like Embedded Vision Engine, VICP

PathPartner is member of embedded VISION ALLIANCE

About Us

PathPartner based out of California, USA and Bangalore India is a leading provider of Consulting, Services and Solutions for digital media centric devices market. Our services range from Product Engineering/R&D and System Integration to Middleware, Applications and System solutions.

With an expert management team which has rich experience in Technology,Engineering & Business practices, PathPartner comprises of 160+ DSP and Embedded system software engineers and Sales & marketing presence in USA, Europe, Korea and Taiwan. The company specializes in addressing challenges faced by leading OEMs, Silicon and OS providers in their product development.

Contact Us

INDIA OFFICE
#16, "PSS Plaza",
New Thippasandra Main Road,
H.A.L. III Stage,
Bangalore - 560 075
T: +91-80-6772 2000
e-mail: sales@pathpartnertech.com

USA OFFICE
48834 Kato Road,
Suite 115A
Fremont
California - 94538 (USA)
T: +1-408-242-7411
e-mail: sales.usa@pathpartnertech.com