Estimating speech from lip movement

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Abstract

1 Introduction and Overview
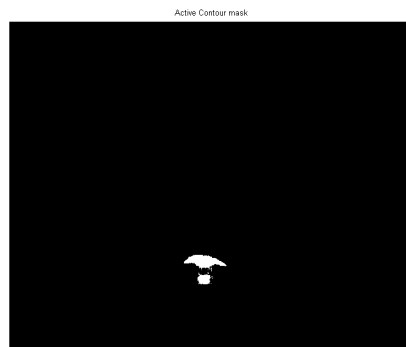

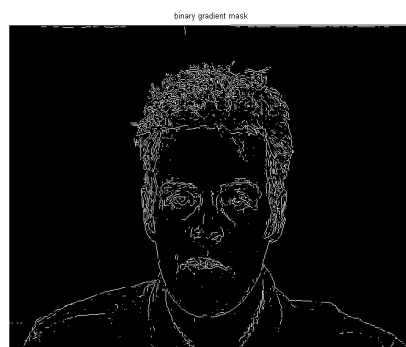Figure 1: Active Contour

Figure 2: Binary Gradient

2   Theoretical Background

3   Implementation and Development

4   Computational Results

5   Summary and Conclusions

References

[1] J. Proctor, S. Brunton and J. N. Kutz, Dynamic mode decomposition with control, arXiv:1409.6358.

[2] J. Grosek and J. N. Kutz, Dynamic mode decomposition for real-time background/foreground separation in video, arXiv:1404.7592.

A MATLAB Functions used

- **[U,S,V]=svd(A):**
  This function performs the singular value decomposition of A and returns U,S and V.

- **mat2gray(A):**
  This function converts a matrix to greyscale.

B MATLAB Code

B.1 hw4.m

```matlab
obj=VideoReader('vid1.mpg');
vidFrames = read(obj);
numFrames = get(obj,'numberOfFrames');
[mov]= getmovout(vidFrames,numFrames-1);
X=frame2im(mov(50));
A=rgb2gray(X);
mask = zeros(size(A));
mask(400:450,320:400) = 1;
bw = activecontour(A,mask,300);
figure, imshow(bw), title('Active Contour mask');
[~, threshold] = edge(A, 'sobel');
fudgeFactor = .5;
BWs = edge(A,'sobel', threshold * fudgeFactor);
figure, imshow(BWs), title('binary gradient mask');
```