

left\_

# Ultrasound Project

Eric Martinez and Jamey Christy

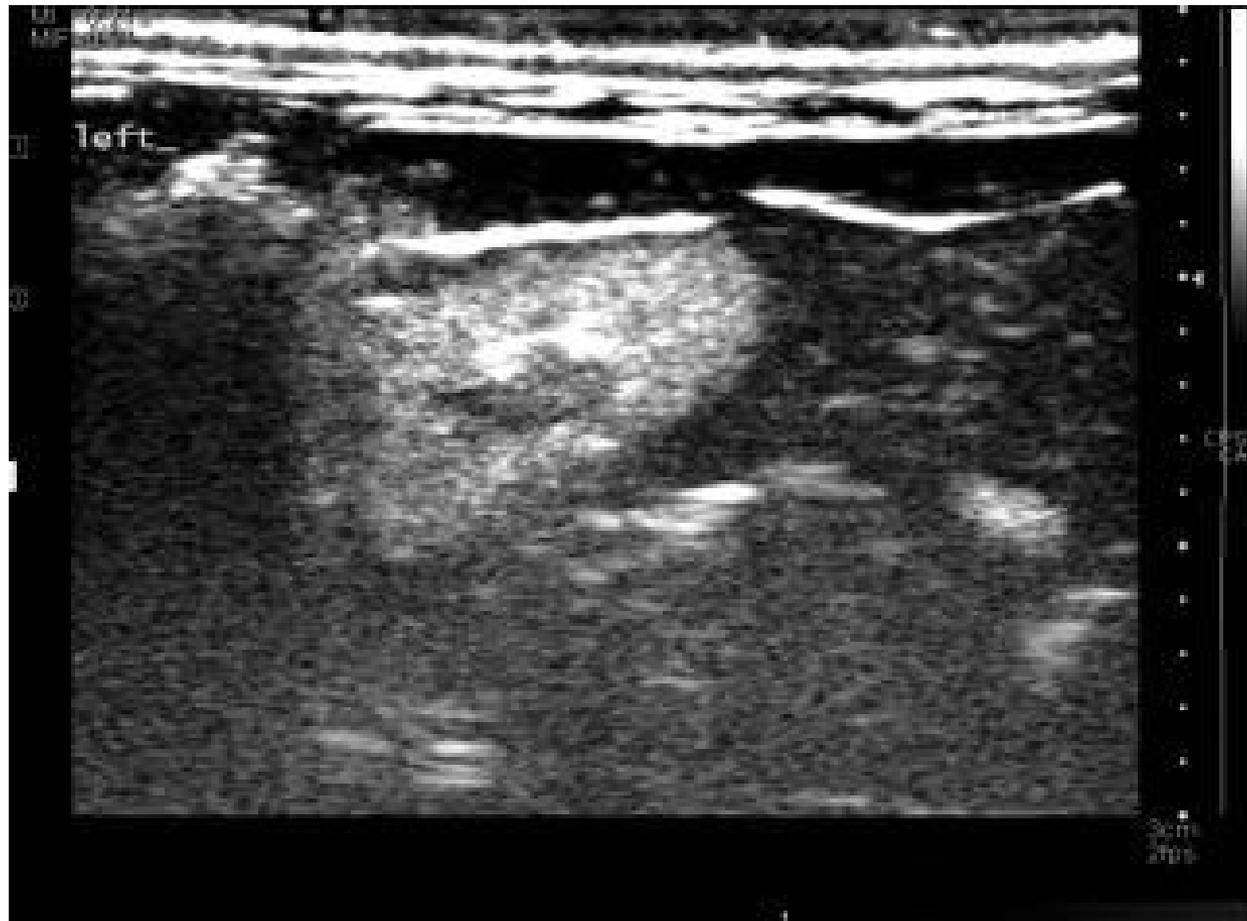


# Overview

- Background
- Problem Statement
- Solution
- Future Work

# Background

- Measure time to 80% Perfusion



# Problem Statement

- Took a Long Time to make Measurement
- Minimal Image Processing Knowledge
- Unfamiliarity with Matlab

# Loading Video



Open Video

1 1 71

Set First Frame 

Clean Up Image

Fast Slow

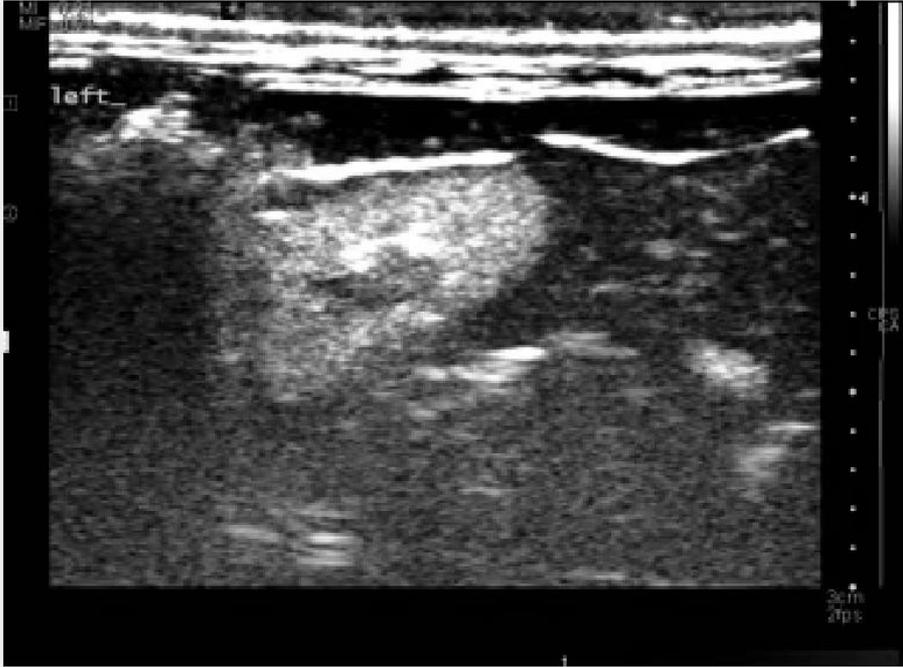
Back to Original

Select Area

Play All

Output Filename  
filename.txt

Time to 80% Perfusion  
 Seconds



# Choosing a Frame

Open Video

63 1 71

Set First Frame

Clean Up Image

Fast Slow

Back to Original

Select Area

Play All

Output Filename

filename.txt

Time to 80% Perfusion

Seconds

left

3cm 20ps

# Cleaning Up Image



Open Video

63 1 71

Set First Frame

Clean Up Image

Fast Slow

Back to Original

Select Area

Play All

Output Filename

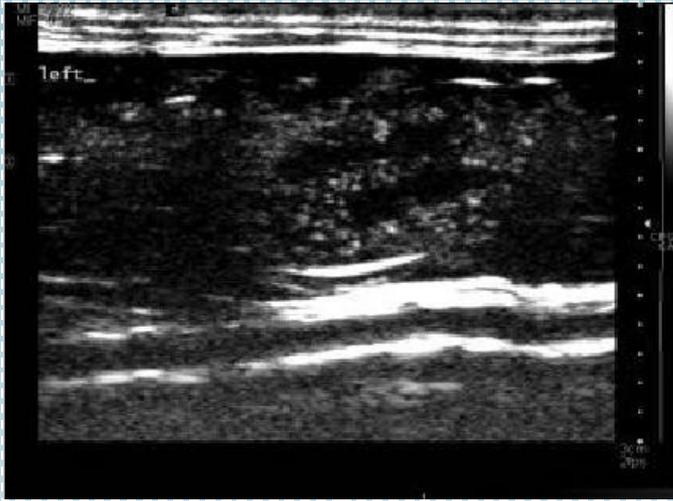
filename.txt

Time to 80% Perfusion

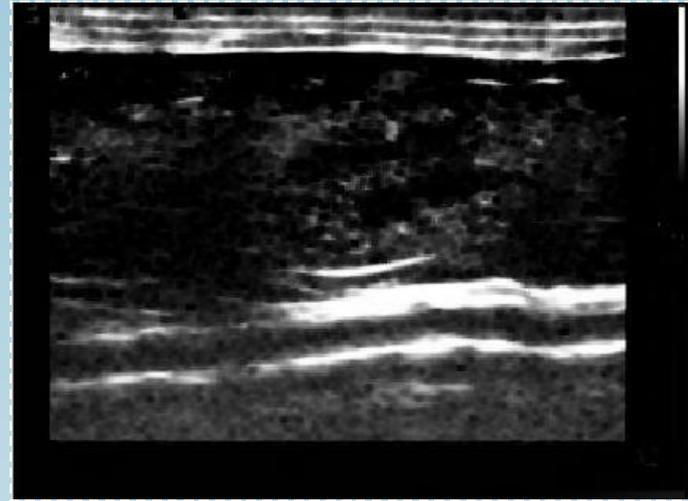
Seconds

# Image Comparisons

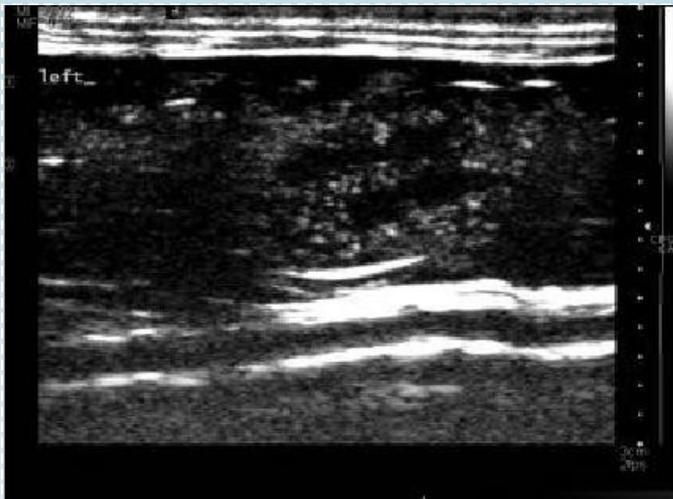
Original



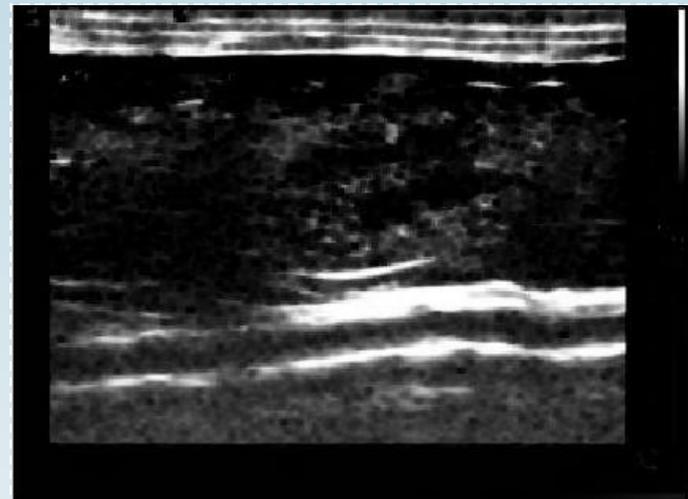
Contraharmonic



Median



Adaptive Filter



# Selecting Area



The screenshot displays a software interface for video processing. On the left is a control panel with the following elements:

- Open Video**: A button to load a video file.
- Frame Navigation**: A slider showing the current frame (63) between a range of 1 to 71.
- Set First Frame**: A button with a green indicator light.
- Clean Up Image**: A section with **Fast** and **Slow** buttons.
- Back to Original**: A button to revert to the original video.
- Select Area**: A button highlighted by a blue arrow, used for selecting a region of interest.
- Play All**: A button to play the entire video.
- Output Filename**: A text input field containing "filename.txt".
- Time to 80% Perfusion**: A section with an empty input field and the label "Seconds".

On the right is a video frame showing a grayscale image of a biological structure. A red rectangular box highlights a specific region of interest. The video frame includes technical data: "left" on the left side, "3cm" and "2fps" in the bottom right corner, and "CPV" and "CA" on the right side.

# Play All

Open Video

63 | 1 | 71

Set First Frame 

Clean Up Image

Fast | Slow

Back to Original

Select Area

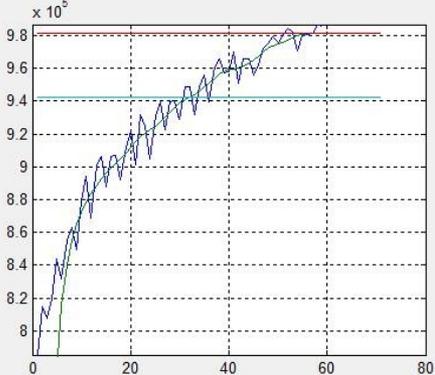
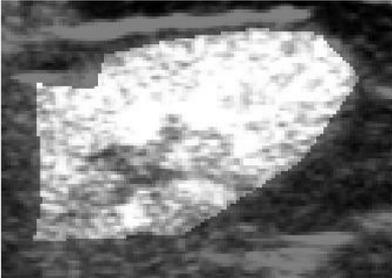
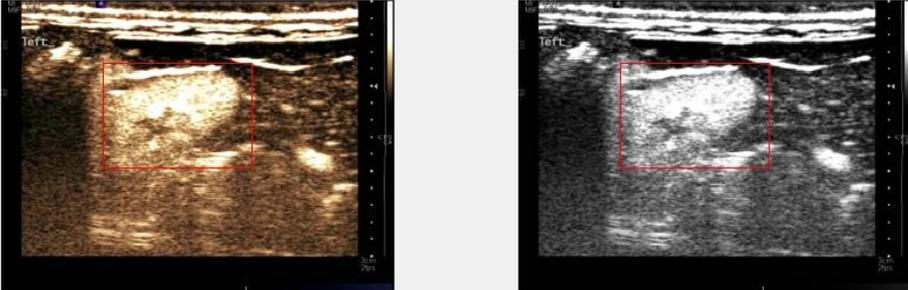
**Play All**

Output Filename

filename.txt

Time to 80% Perfusion

32 Seconds



Time (seconds)	Perfusion (x 10 <sup>5</sup> )
0	8.0
5	8.4
10	8.8
15	9.1
20	9.3
25	9.4
30	9.5
35	9.6
40	9.7
45	9.75
50	9.8
55	9.8
60	9.8

# Future Work

- Compare to Original Data
- Instruction Manual
  - Converting and Reading MPEG-4
- Published

left\_

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