

DeepEdge Manual

Diagnostic function using SNAKE energy

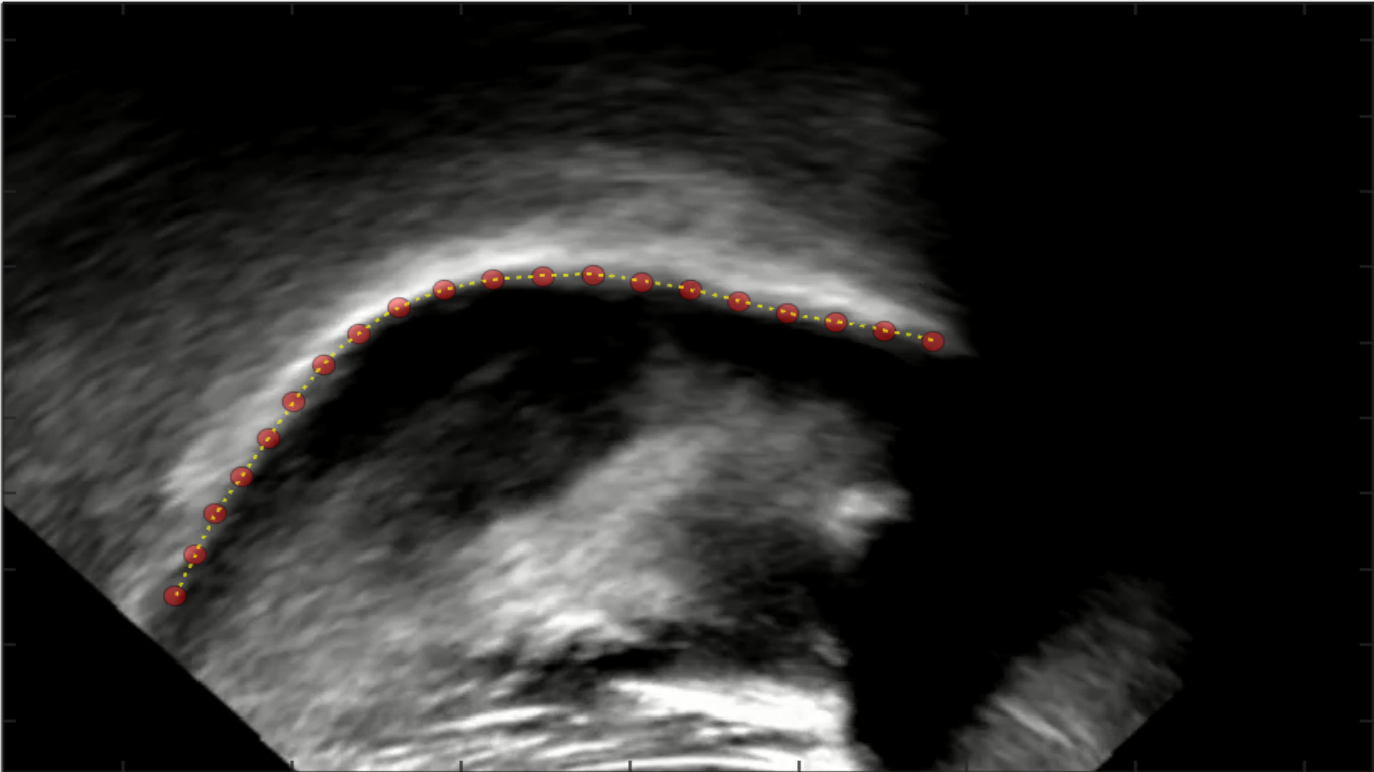
WEI-RONG CHEN

Diagnostics

DeepEdge

File Export Command Audio Info

File: 2021_08_24_16_17_40.mp4 1/1



6007008009001000110012001300

AH0 L AO1 NG B IH1 R D K L IH1 NG Z T UW HH

< File |< 3 << < > >> 3 >| Go to 1 File > 1345, 38

Frame#: 1473 / 4973

Time (s): 24.5333 82.9

ConfigureAnchorDeepEdgeDiagnostic

SNAKE energy of this frame:

Joint energy: Mean 0.0826 Max 0.175 Q3 0.101

Internal energy: roughness 0.00617

Diagnostic filters:

Joint Energy: ☐ Mean > 0.35 ☐ Max > 0.8 ☐ Q3 > 0.7

Roughness: ☒ > 0.03

Run Diagnostics

	Filtered Frame	
1	7	▲
2	29	■
3	30	
4	483	▼

☒ Show on audio

Diagnostics

1/1

Frame#:

1473

/ 4973

Time (s):

24.5333

82.9

Configure

Anchor

DeepEdge

Diagnostic

SNAKE energy of this frame:

Joint energy: Mean

0.0826

Max

0.175

Q3

0.101

Internal energy: roughness

0.00617

Diagnostic filters:

Joint Energy:

☐ Mean >

0.35

☐ Max >

0.8

☐ Q3 >

0.7

Roughness:

☒ >

0.03

Run Diagnostics

Filtered Frame

☒ Show on audio

SNAKE energy values of the contour shown on this frame. Higher values are undesired.

Joint energy = internal energy + external energy

Roughness = first half of internal energy = 1 - smoothness

Diagnostics

Diagnostic filters:

Joint Energy: ☒ Mean >

☐ Max > ☐ Q3 >

Roughness: ☒ >

Run Diagnostics

	Filtered Frame	
1	7	▲

☒ Show on audio

Set criteria for diagnostic filters. In this example, any frame that has “mean (across 20 anchors) joint energy > 0.35”, OR “Roughness > 0.03” will be filtered out.

Empirically, valid tongue contours most likely have mean joint energy < 0.4, and roughness < 0.05.

Diagnostics

The interface includes a 'Roughness' filter set to ☒ > 0.03 and a 'Run Diagnostics' button. Below the button is a checkbox for 'Show on audio' which is also checked. A table titled 'Filtered Frame' lists frame indices. Frame 2 is highlighted. A red text box at the bottom states: 'Found 264 frames with high (undesired) energy.'

Roughness: ☒ > 0.03

Run Diagnostics

☒ Show on audio

	Filtered Frame
1	7
2	29
3	30
4	483

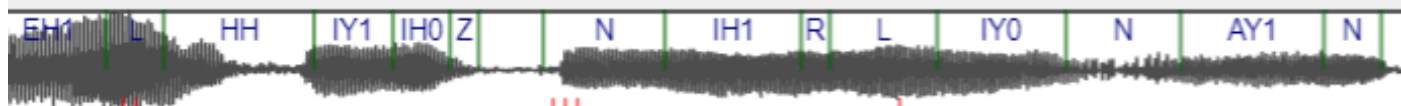
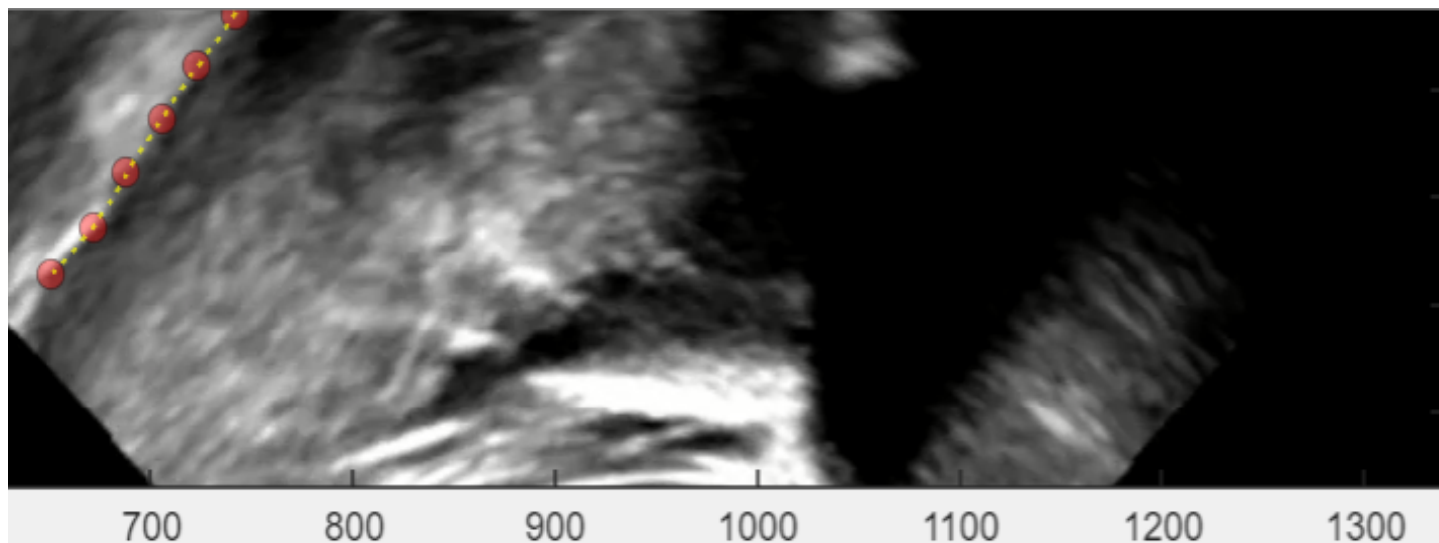
Found 264 frames with high (undesired) energy.

Click this button to run diagnostic filtering.

After diagnostics are done, the indices of frames that met the filtering criteria will be listed in this table.

Click/select a frame number listed here to jump to this frame.

Diagnostics



Red tick markers on the audio axis indicate the locations of those frames that contains contours with high energy.

Roughness: ☒ > 0.03

Run Diagnostics

	Filtered Frame	
1		7
2		29
3		30
4		483

☒ Show on audio

Found 264 frames with high (undesired) energy.

Check "on" or "off" this check box to display or hide the red tick markers of filtered frames on the audio axis.