Simon Fraser University

CMPT 742: Practices in Visual Computing, Fall 2020

Assignment #1

For
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By
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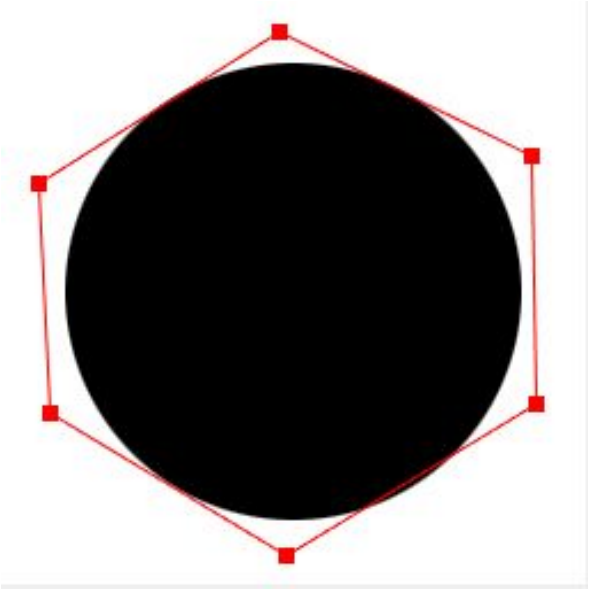
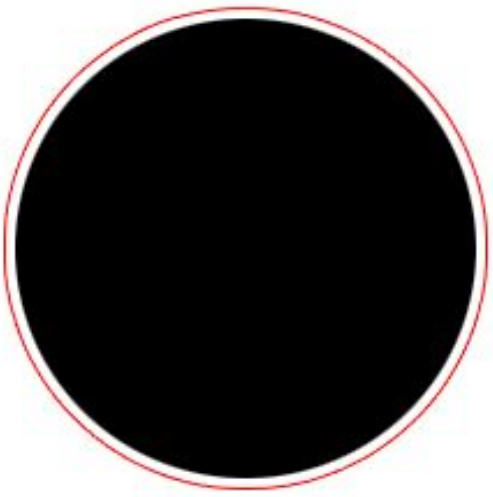
Active Contour

1. Binary Images

Circle

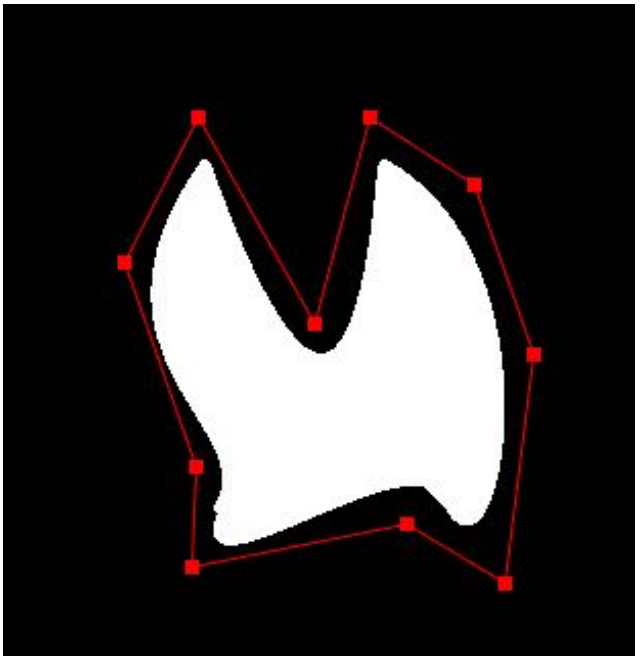
N = 200;
alpha = 0.8;
beta = 0.15;
gamma = 0.9;
kappa = 0.05;
Wline = 0.5;
Wedge = 1.0;
Wterm = 0.05;
sigma = 1;

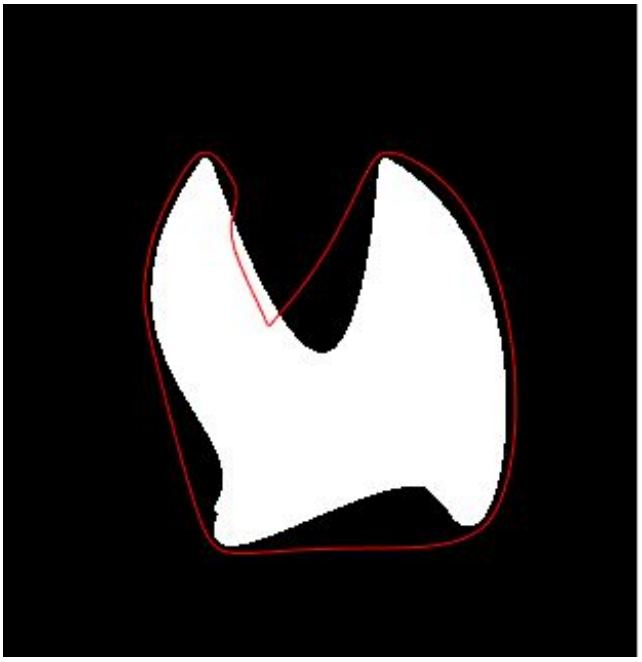




Shape

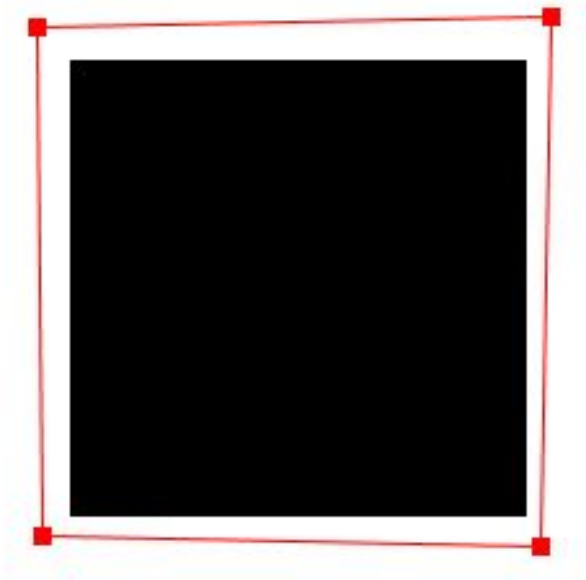
N = 200;
alpha = 0.3;
beta = 0.8;
gamma = 0.9;
kappa = 0.02;
Wline = 10.6;
Wedge = 0.75;
Wterm = 0.5;
sigma = 0.5;

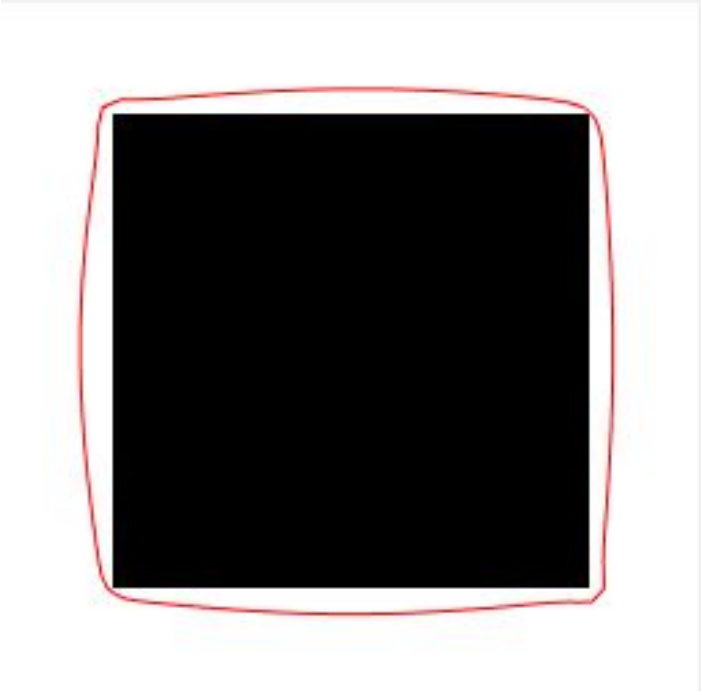




Square

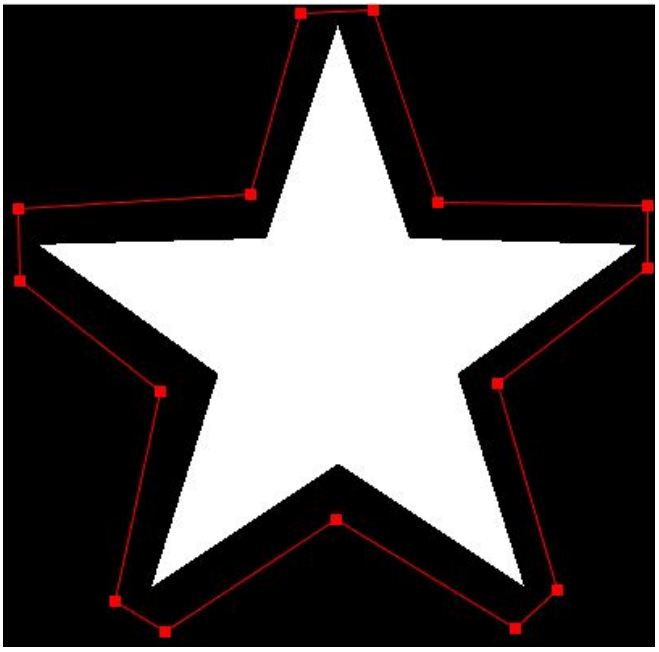
N = 200;
alpha = 1.4;
beta = 0.15;
gamma = 0.9;
kappa = 0.05;
Wline = 0.5;
Wedge = 1.0;
Wterm = 0.05;
sigma = 1;

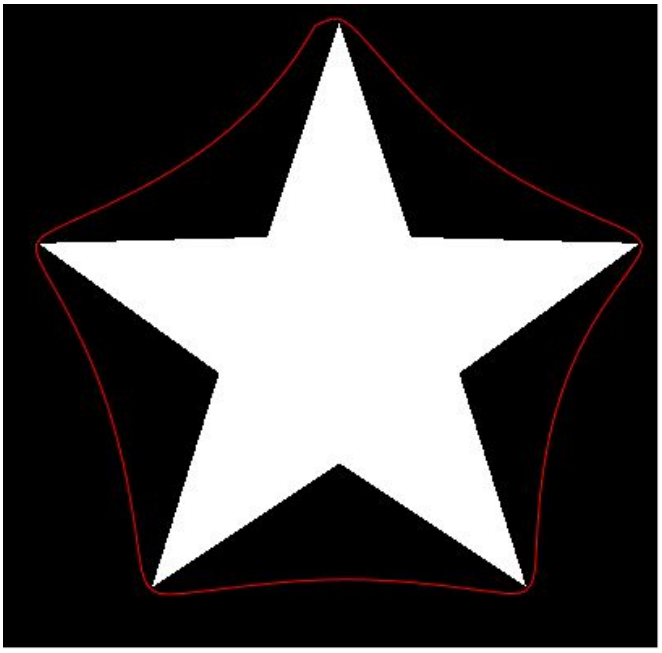




Star

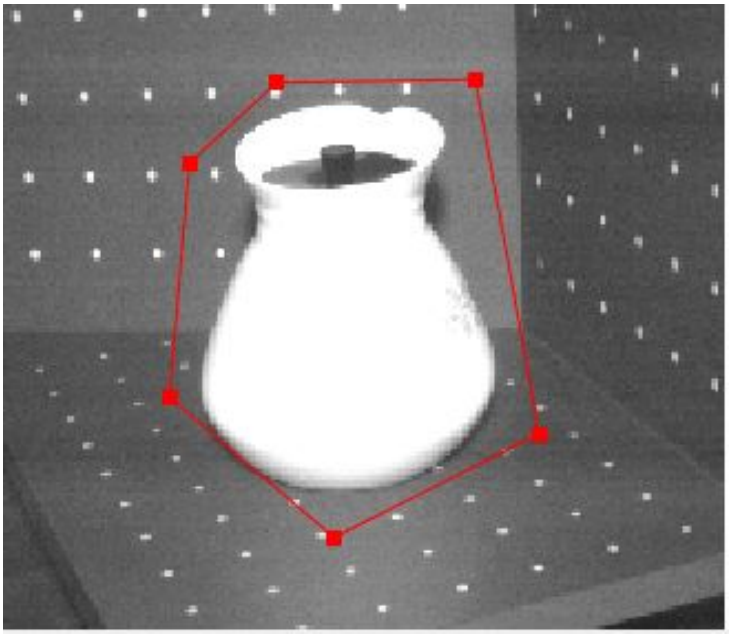
N = 200;
alpha = 0.2;
beta = 0.2;
gamma = 0.9;
kappa = 0.2;
Wline = 0.5;
Wedge = 0.5;
Wterm = 0.5;
sigma = 5;

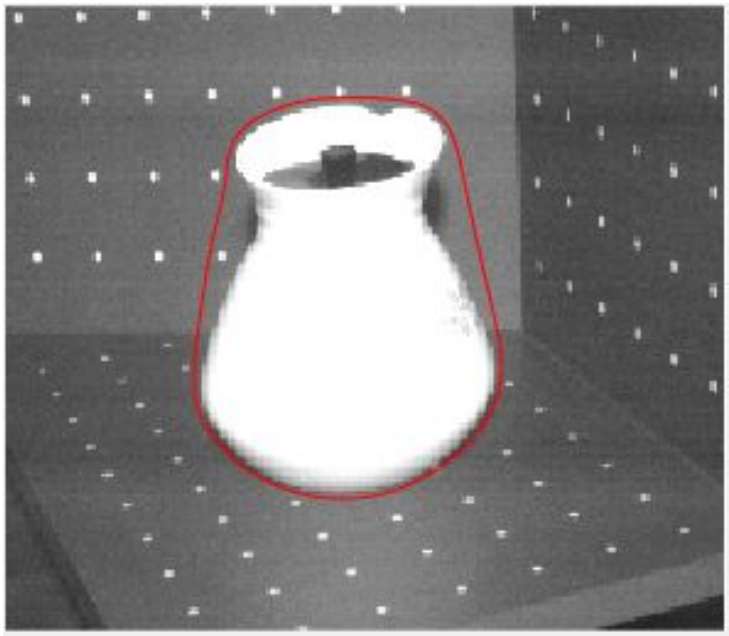




Vase

N = 200;
alpha = 3;
beta = 25;
gamma = 0.9;
kappa = 0.01;
Wline = 0.3;
Wedge = 0.8;
Wterm = 0.3;
sigma = 0.5;

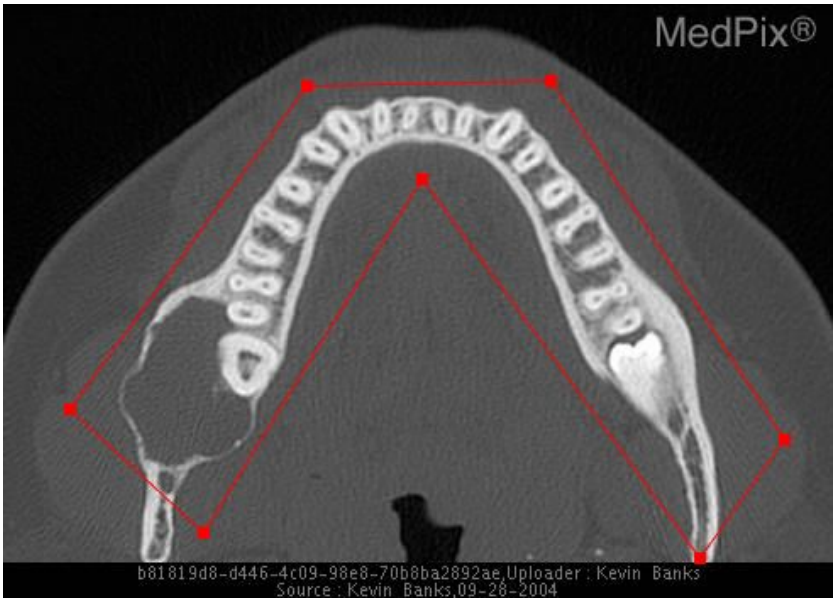


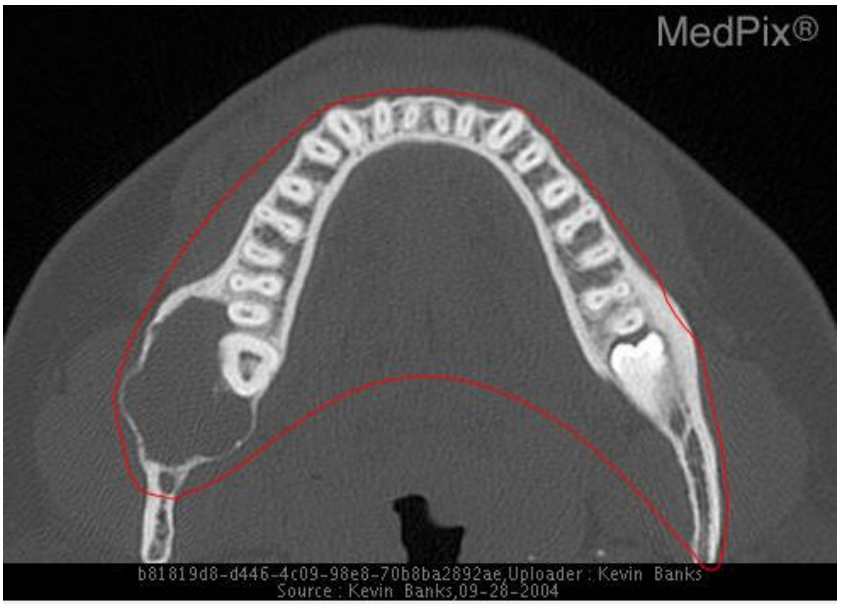


2. Dental

N = 200;
alpha = 0.8;
beta = 0.15;
gamma = 0.9;
kappa = 0.05;
Wline = 0.5;
Wedge = 1.0;
Wterm = 0.05;
sigma = 1;

The row of teeth

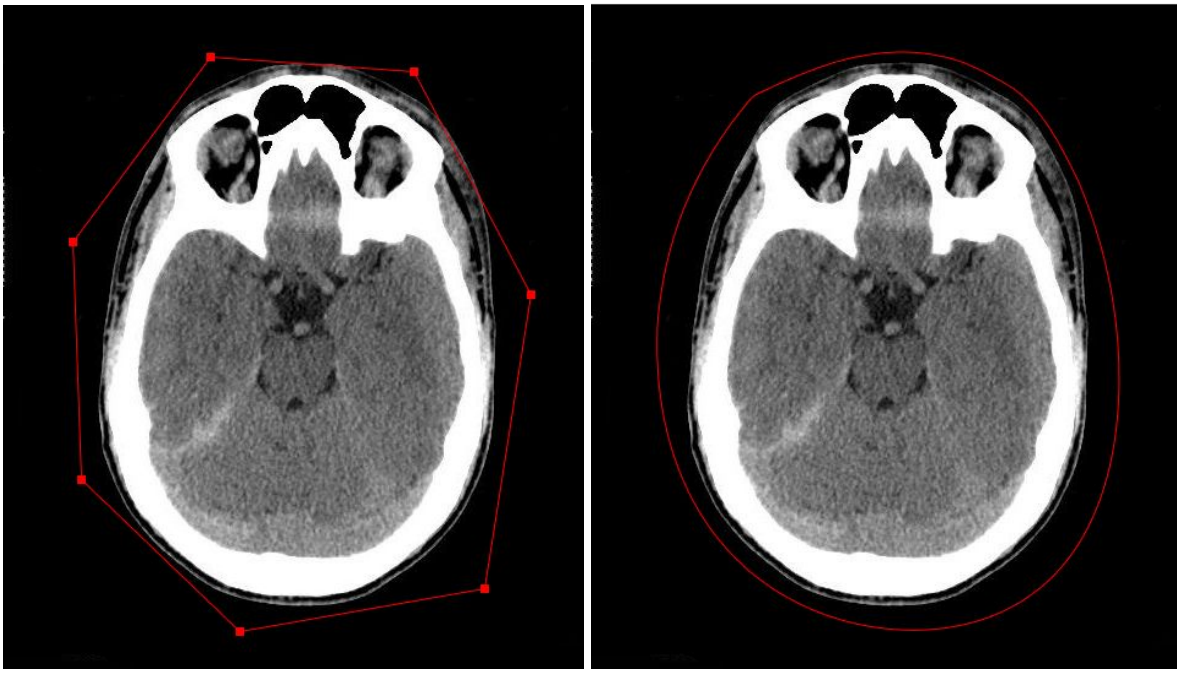




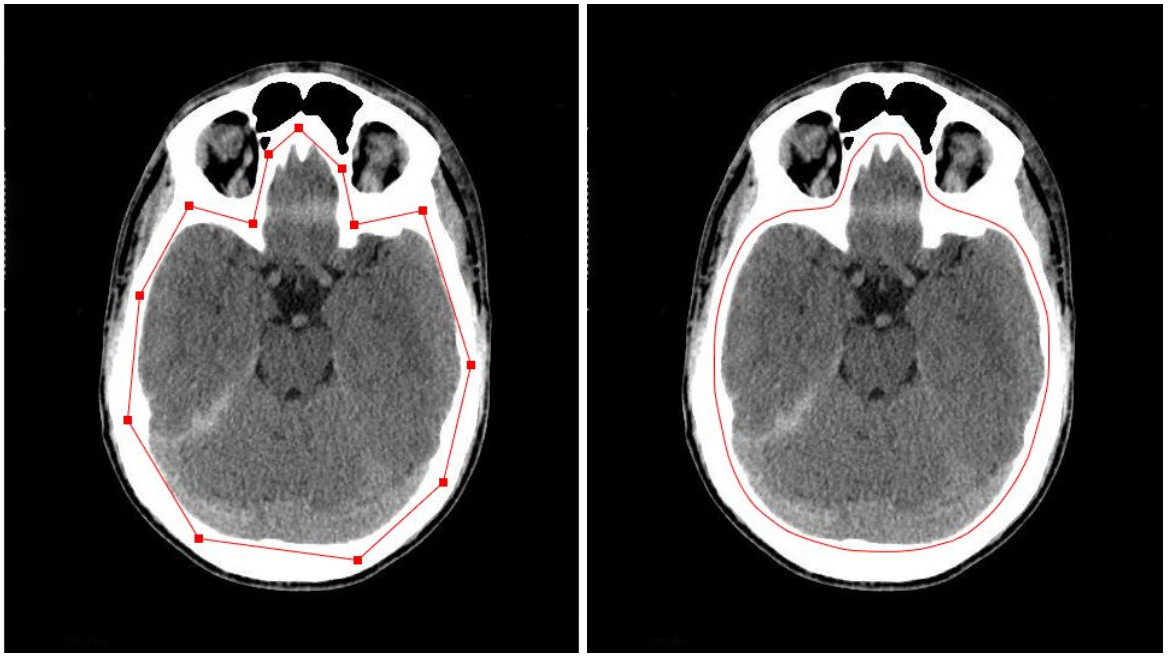
3. Brain

N = 200;
alpha = 0.4;
beta = 0.15;
gamma = 0.9;
kappa = 0.05;
Wline = 0.5;
Wedge = 1.0;
Wterm = 0.05;
sigma = 1;

The outer shell of the skull



The inner contour of the brain matter



The right eye hole

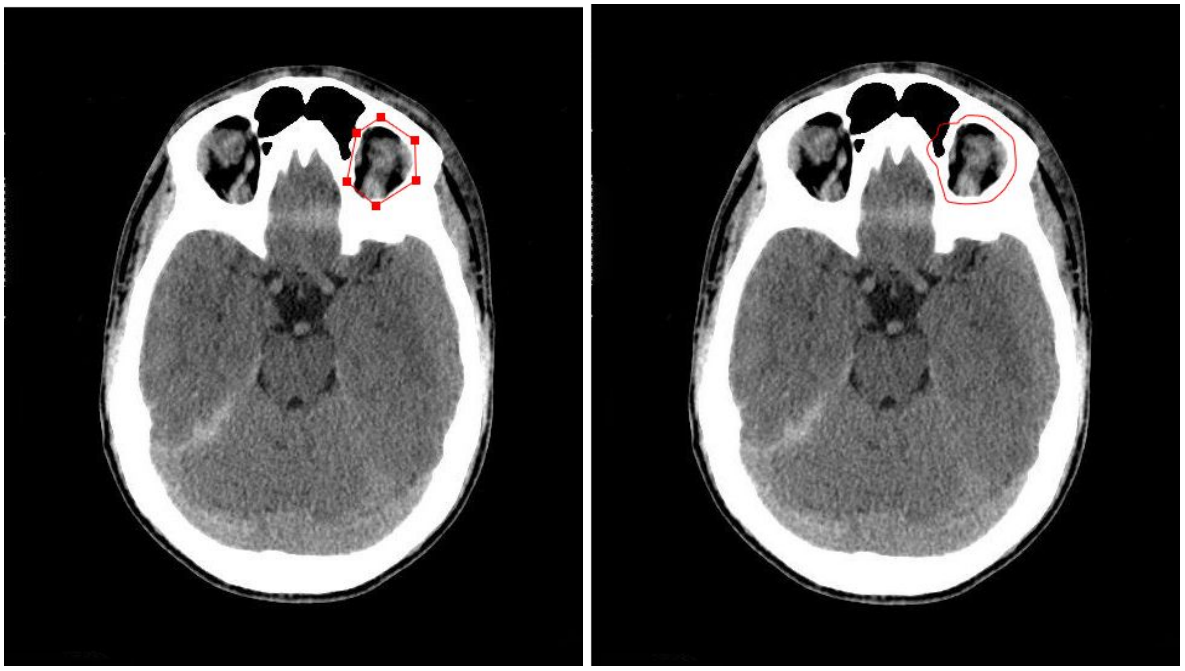


Image Reconstruction

Ground truth

Globally brighter

Brighter on the left side

Brighter on the bottom side

Brighter on right bottom corner