

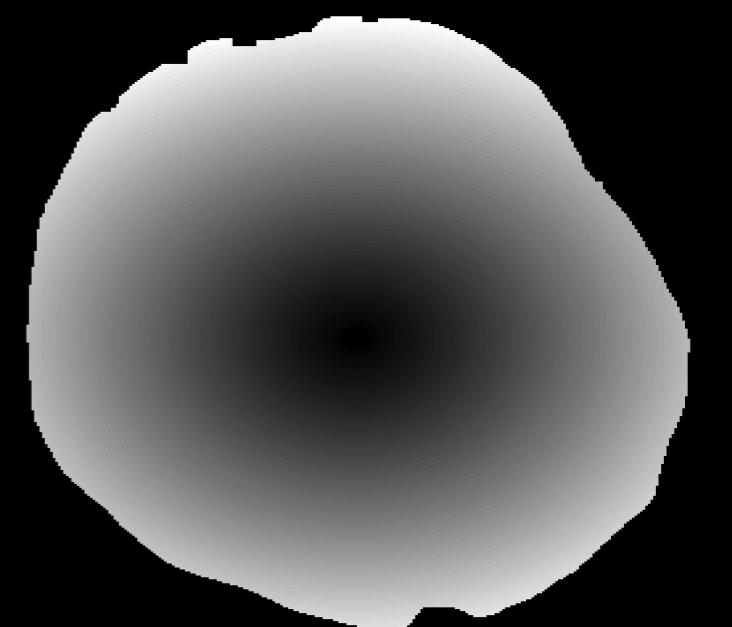
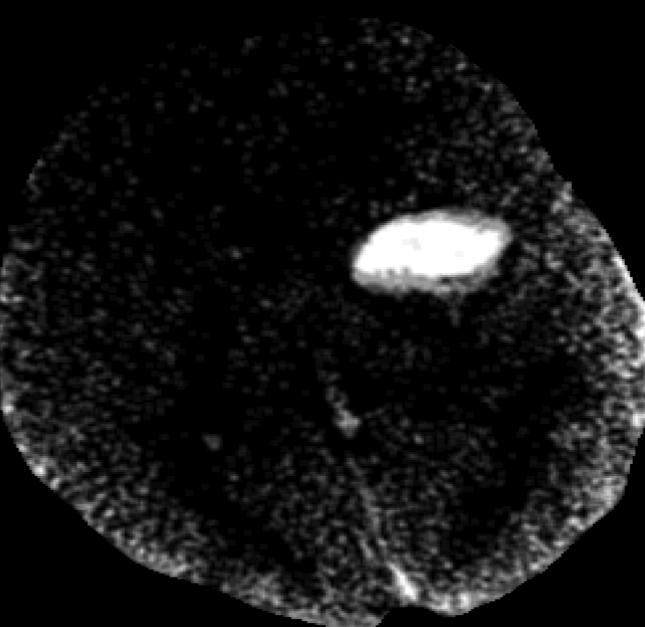
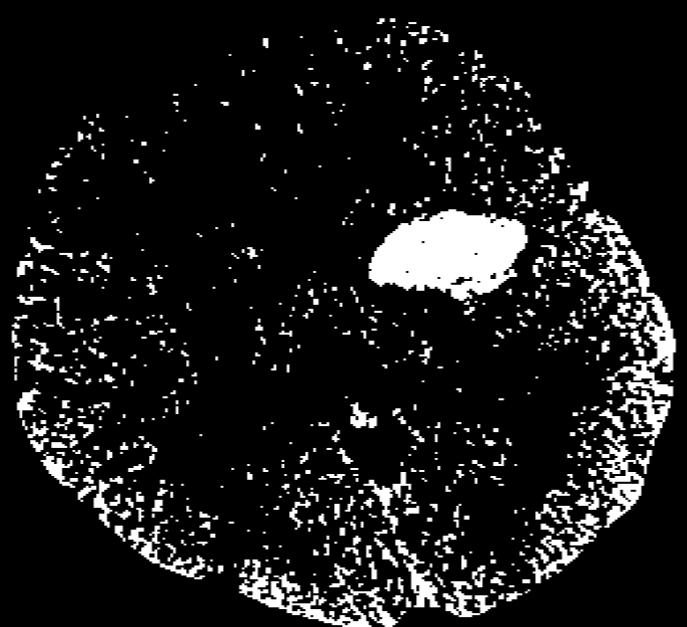
Notation: Let  $i$  denote subject/scan,  $v$ : voxel,  $\mathbf{1}$ : indicator function,  $N(v)$ : neighborhood for voxel  $v$ , and  $x(v)$ : intensity for voxel  $v$  in Hounsfield Units (HU).

$$x_i(v)$$

$$\mathbf{1}(40 \leq x_i(v) \leq 80)$$

$$\frac{\sum_{k \in N_i(v)} \mathbf{1}(40 \leq x_i(v,k) \leq 80)}{N_i(v)}$$

Distance of voxel to centroid

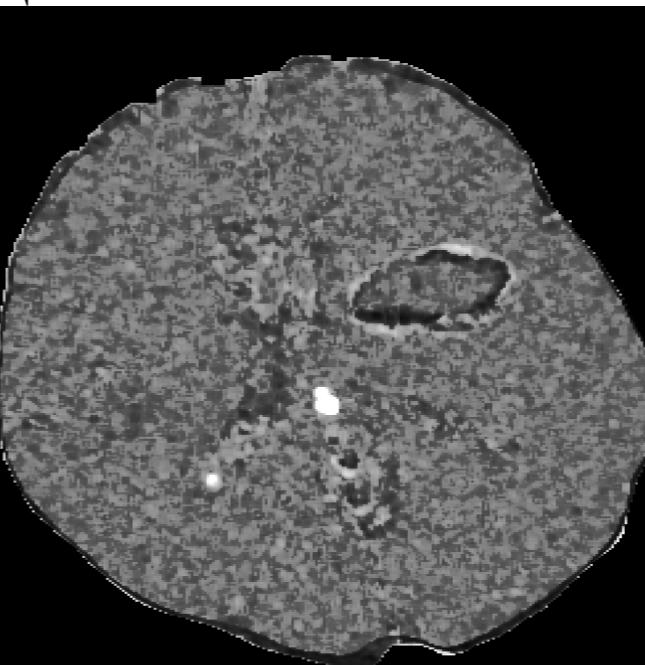
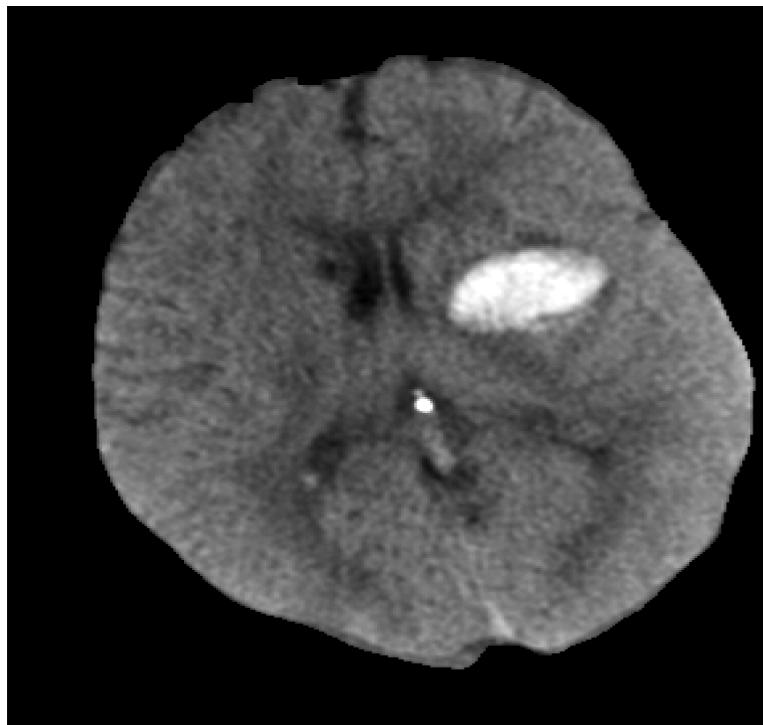


$$\bar{x}_{i,1}(v) = \frac{\sum_{k \in N_i(v)} x_i(v,k)}{N_i(v)}$$

$$\sqrt{\frac{\sum_{k \in N(v)} (x_i(v,k) - \bar{x}_i(v))^2}{N_i(v)}}$$

$$\sqrt[3]{\frac{\sum_{k \in N(v)} (x_i(v,k) - \bar{x}_i(v))^3}{N_i(v)}}$$

$$\sqrt[4]{\frac{\sum_{k \in N(v)} (x_i(v,k) - \bar{x}_i(v))^4}{N_i(v)}}$$

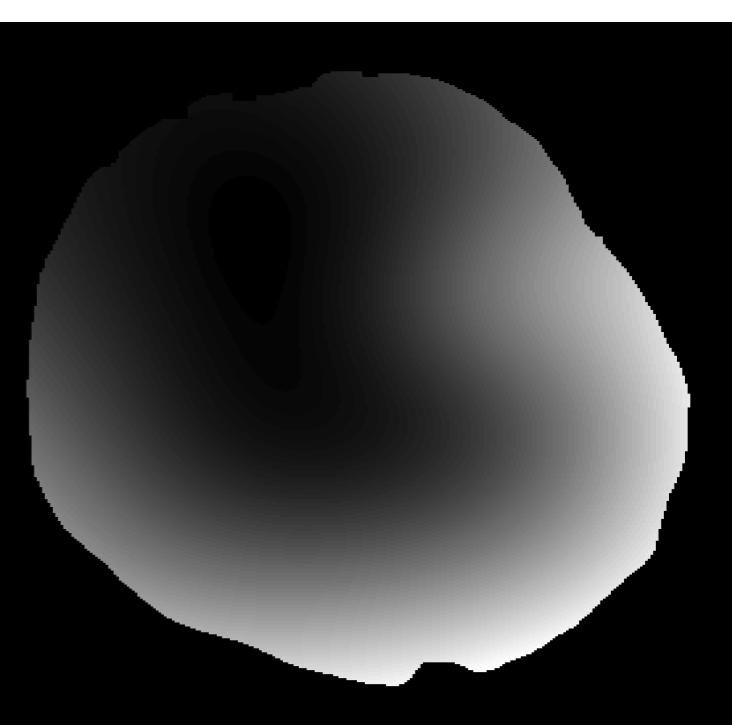
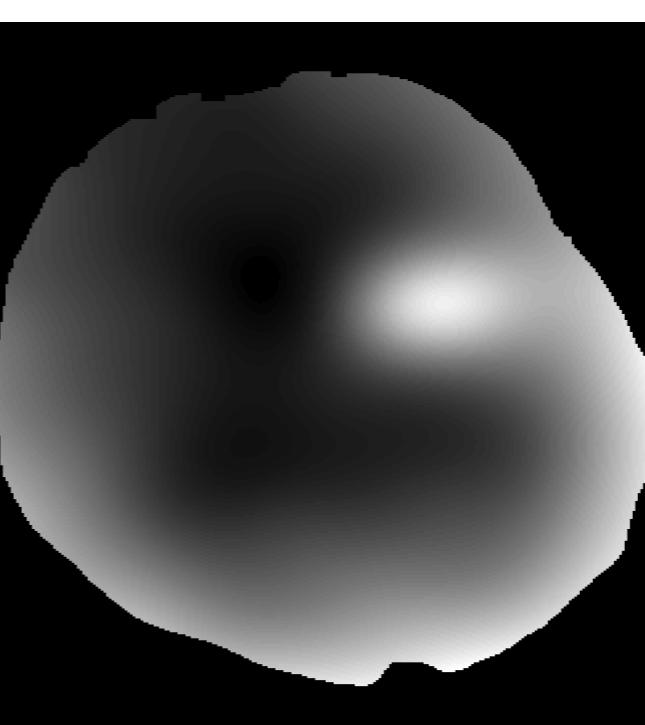
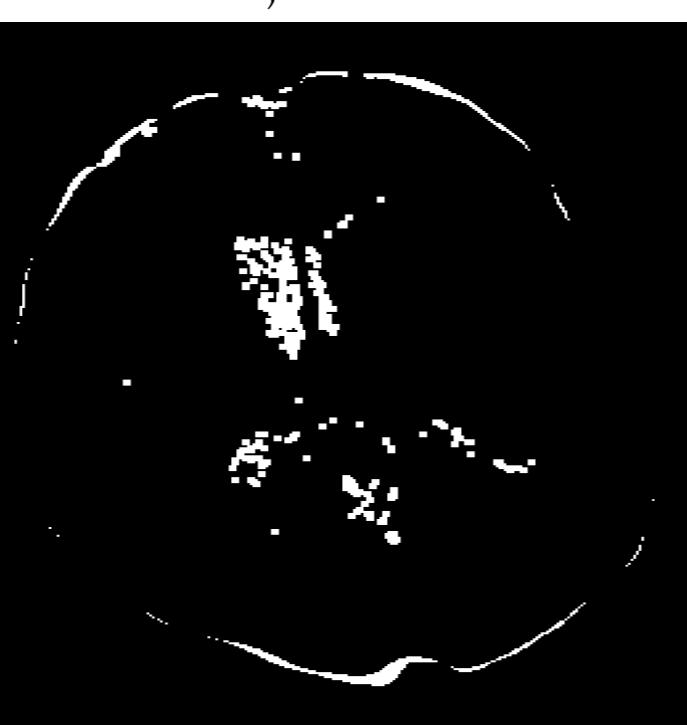
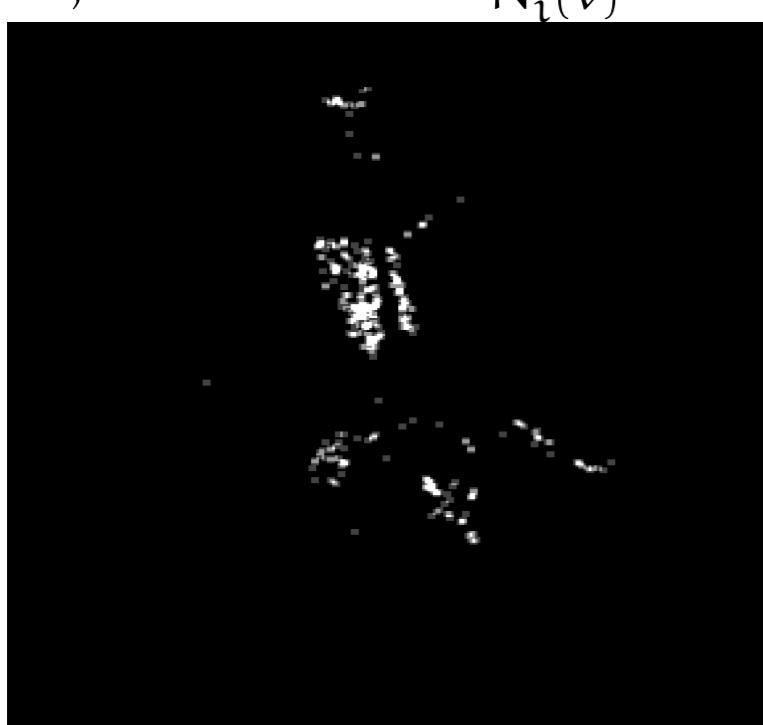


$$p_{i,0}(v) = \frac{\sum_{k \in N_i(v)} \mathbf{1}\{x_i(v,k)=0\}}{N_i(v)}$$

$$\mathbf{1}\{p_{i,0}(v) > 0\}$$

Smooth ( $\sigma = 10 \text{ mm}^3$ )

Smooth ( $\sigma = 20 \text{ mm}^3$ )



$$\frac{x_i(v) - \bar{x}_i(v, \text{axial})}{\sigma(v, \text{axial})}$$

$$\frac{x_i(v) - \bar{x}_i(v, \text{sagittal})}{\sigma(v, \text{sagittal})}$$

$$\frac{x_i(v) - \bar{x}_i(v, \text{coronal})}{\sigma(v, \text{coronal})}$$

$$\frac{x_i(v) - \bar{x}_i(v, \text{template})}{\sigma(v, \text{template})}^*$$

