

Supplementary Information

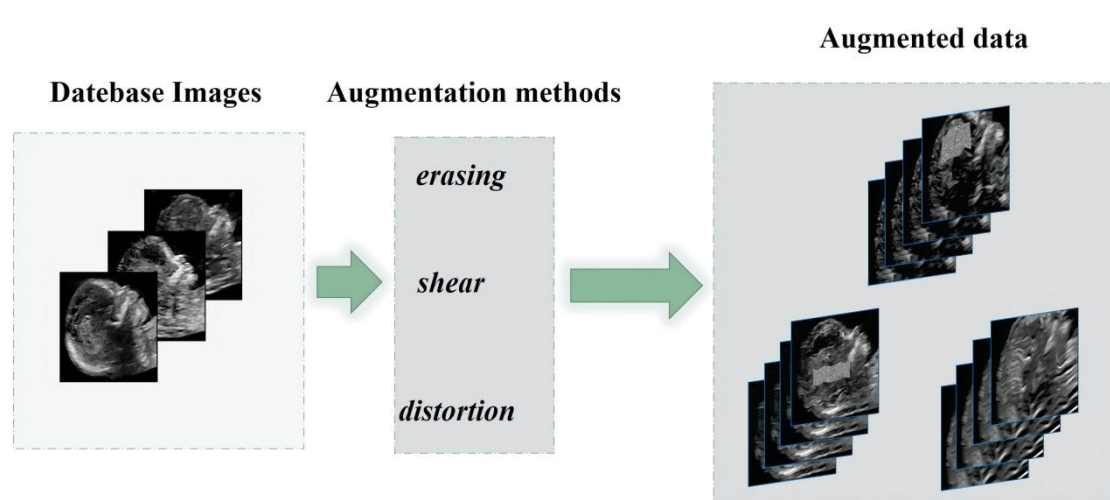


Figure S1. Augmentation Methods: We used distortion, zoom in, tilt, zoom out, crop, and a combination of multiple methods to augment the training date set.

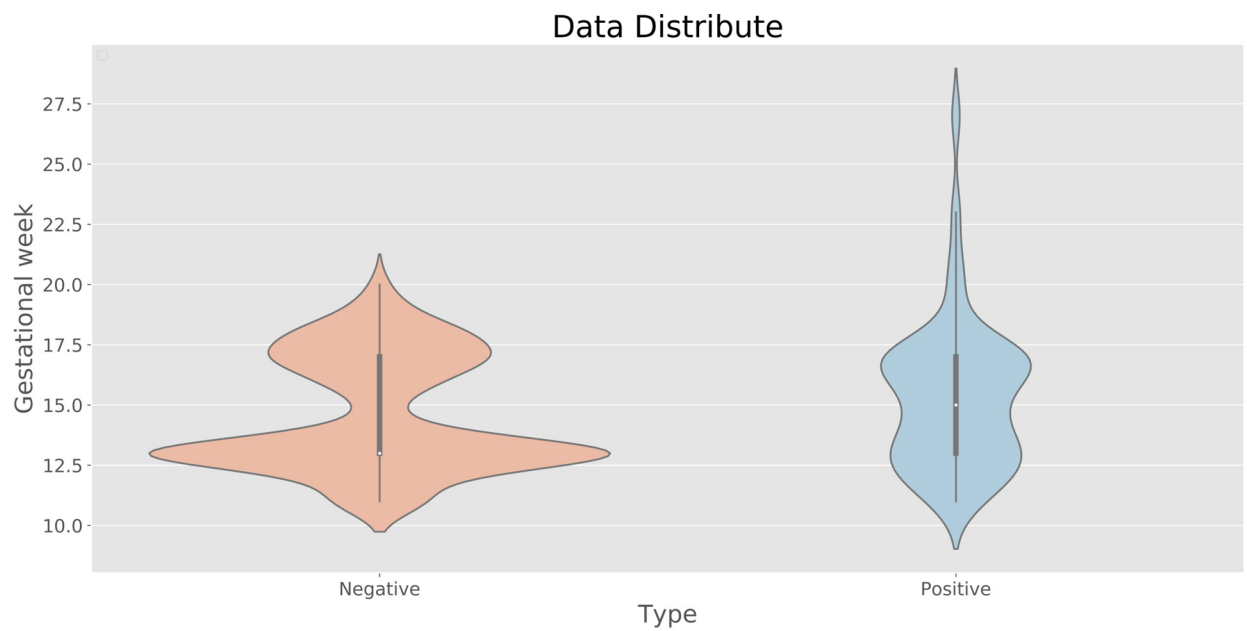
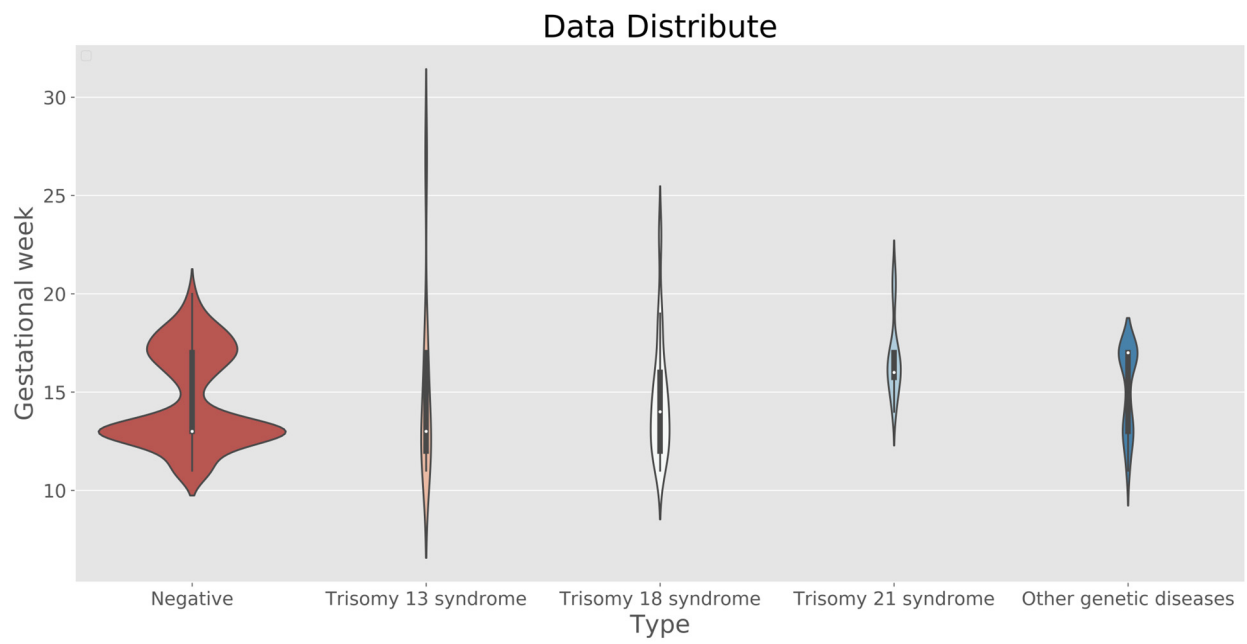


Figure S2. Violin Plot: Gestational age distribution of each group, including negative, positive, Trisomy 21, Trisomy 18, Trisomy 13 and other genetic disease groups.

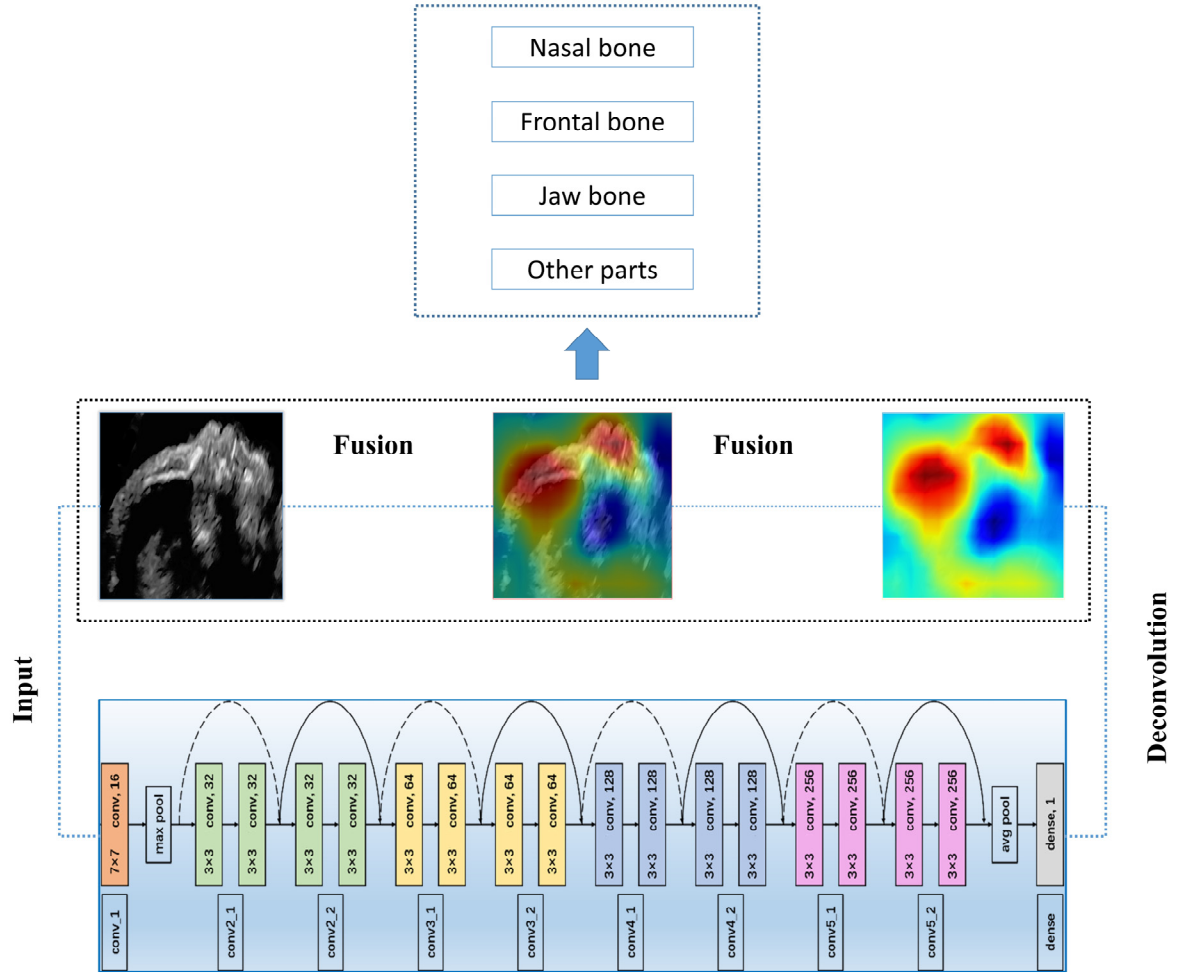
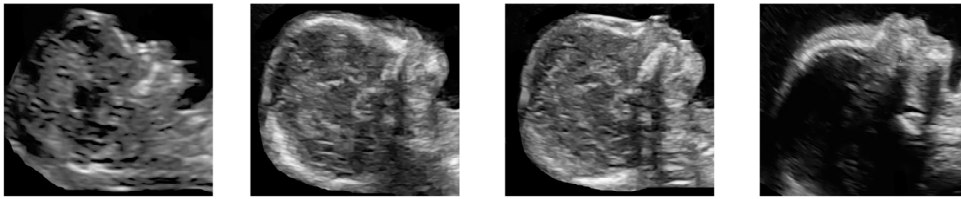


Figure S3. Model structure frame: Model parameters of Pgds-ResNet's and the framework of the interpretable experiment.

A



B

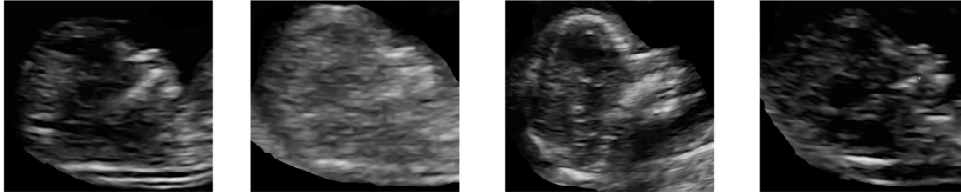
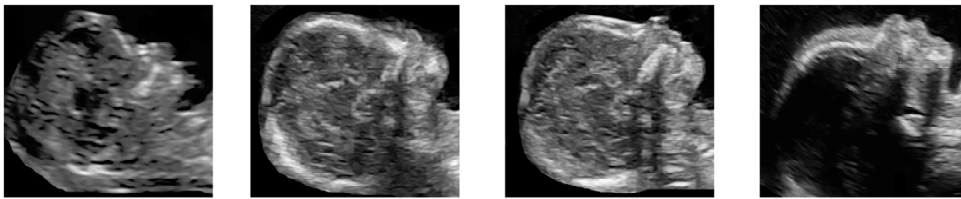


Figure S4. Image quality comparison. A. Good quality. B. Poor quality.

A



B

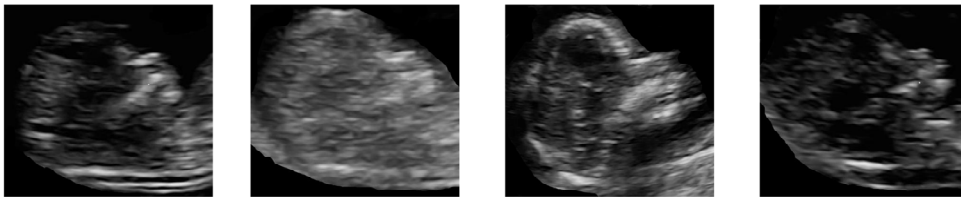


Figure S5. Image quality comparison. A. Good quality. B. Poor quality. In this study, image quality was identified as the main cause of incorrect classification results. The images in B had poor quality, which led to misclassification by the model.