Dataset: Download from this [linkLinks to an external site.](#)

Dataset Reference: Duan H, Zhai G, Min X, Che Z, Fang Y, Yang X, Gutiérrez J, Callet PL. A dataset of eye movements for the children with autism spectrum disorder. InProceedings of the 10th ACM Multimedia Systems Conference 2019 Jun 18 (pp. 255-260).

Overall Tasks:

- To predict the saliency map using several saliency prediction models
- Compare the predicted saliency map with **Typically Developed (TD)** fixation maps
- Compare the same predicted saliency map with **Autism spectrum disorder (ASD)** fixation maps
- Analyze the performance of predicted saliency maps approximating TD and ASD fixation maps

Steps to follow:

1. Download the dataset from 'Saliency4asd.zip'. For each image in TrainingData/Images folder, the folder TrainingData/TD_FixMaps and TrainingData/ASD_FixMaps contain fixation maps of TD and ASD subjects. You can consider TrainingData/TD_FixMaps, and TrainingData/ASD_FixMaps are the ground truth for the prediction. Given an image as an input, a saliency prediction model should generate a saliency prediction map that approximates the corresponding (a) TD and (b) ASD map.
2. Now, become familiar with the [websiteLinks to an external site.](#). This website mentions popular saliency prediction models. Pick at least three (3) models from this list for which codes (preferably Matlab/Python, but others also ok) are available. Then, generate saliency prediction maps for each image in TrainingData/Images. In this way, you will get three sets of predicted saliency maps. Do not try to implement any model by yourself. Instead, use the available codebase.
3. Next, compare each set of prediction maps with (a) TrainingData/TD_FixMaps and (b) TrainingData/ASD_FixMaps. For comparison, there are several evaluation metrics available here:
   1.
   - [https://github.com/cvzoya/saliency/tree/master/code_forMetricsLinks to an external site.](https://github.com/cvzoya/saliency/tree/master/code_forMetrics).
   - [https://github.com/matthias-k/saliency-benchmarking/blob/master/evaluate.pyLinks to an external site.](https://github.com/matthias-k/saliency-benchmarking/blob/master/evaluate.py)
   - Use at least three evaluation metrics.
4. If there is x number of images in the dataset, each saliency model will provide x number of saliency maps. After applying each evaluation metric, you will get x number of performance values for (a) TD and another x number of performance values for (b) ASD. Report the average/mean performance of all values. Then, fill in the following tables.

(a) For TD:

	AUC_Borji	AUC_Judd	AUC_shuffled	CC	EMD	Info Gain	KLdiv	NSS
Model 1								
Model 2								
Model 3								

(b) For ASD:

	AUC_Borji	AUC_Judd	AUC_shuffled	CC	EMD	Info Gain	KLdiv	NSS
Model 1								
Model 2								
Model 3								