Supplementary material for the paper:
A high-throughput zebrafish screening method for visual mutants by light-induced locomotor response

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Here we give the classification results for all 4 methods mentioned in the manuscript (3NN, Naive Bayes, SVM and EM-GMM). Fig. S1 and S2 shown the classification results for 5 dpf and 8 dpf zebrafish larvae using baseline activities, i.e. the the last 0.5-hour of the 3.5-hour dark adaptation data without light stimulus.
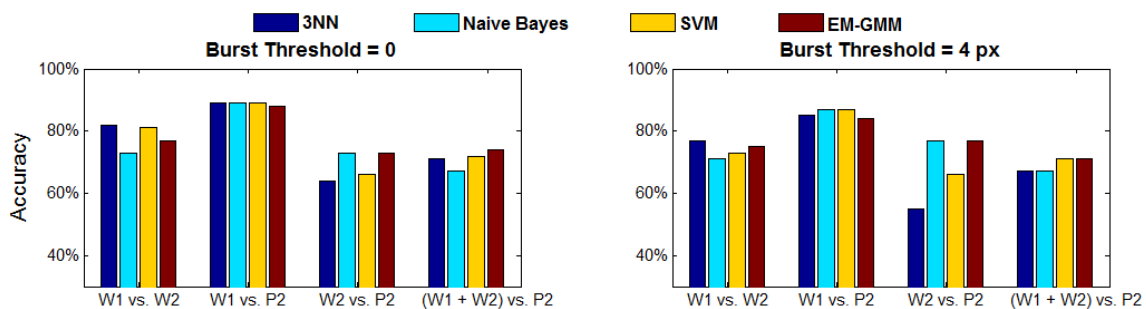

Figure 1: Classification results of 5 dpf zebrafish larvae using baseline activities. The activities recorded in the last 30 minutes of the initial 3.5-hour dark period before the first light-ON stimulus was used as input. Activities of both BT = 0 and BT = 4 pixel were analyzed. We used 4 different classification methods, as bars from left to right: 3 Nearest Neighbor (3NN), Naive Bayes (NB), Support Vector Machine (SVM) and Expectation-Maximization algorithm with Gaussian Mixture Model (EM). In addition, 4 different classification problems were tested, in which W1, W2, P2 denoted WT-#1, WT-#2, *pde6c*-#2, respectively.
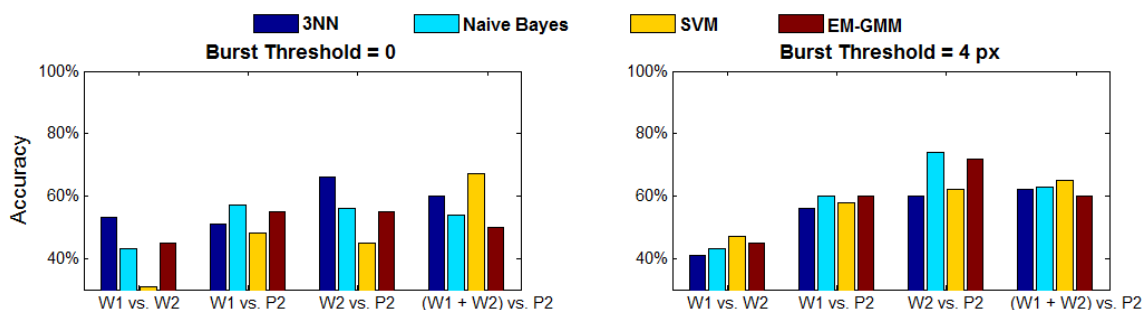

Figure 2: Classification results of 8 dpf zebrafish larvae using baseline activities. The parameters are the same with Fig. 1.

The overall classification results for 5 dpf and 8 dpf zebrafish larvae using first 1-min, first 2-min and all 30-min LLR data were also given in Fig. S3 and S4. Note that the 3 trials ON-OFF data of 3 hours was first averaged before classification, as denoted in Fig. 3 of the manuscript.
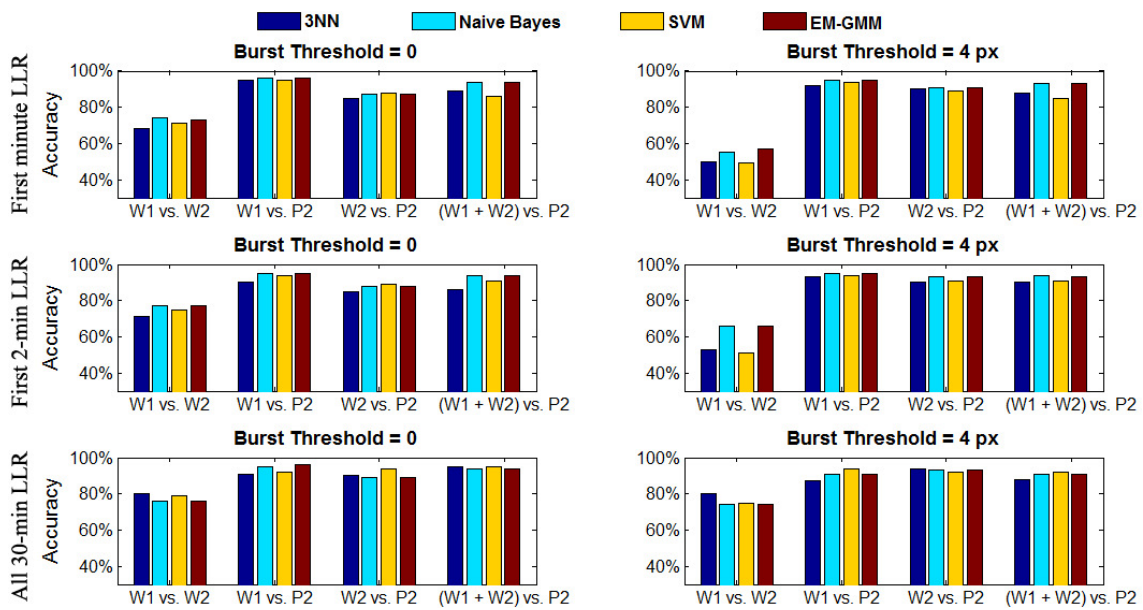

Figure 3: Classification results using the LLR of 5 dpf zebrafish larvae. Classification using first 1-min (Top row), first 2-min (Middle row) and all 30-min LLR data (Bottom row). Column from left to right: BT = 0 and 4 pixel. For each classification problem, the bars from left to right represented the results of 3NN, Naive Bayes, SVM and EM-GMM respectively. The other parameters are the same with Fig. 1.
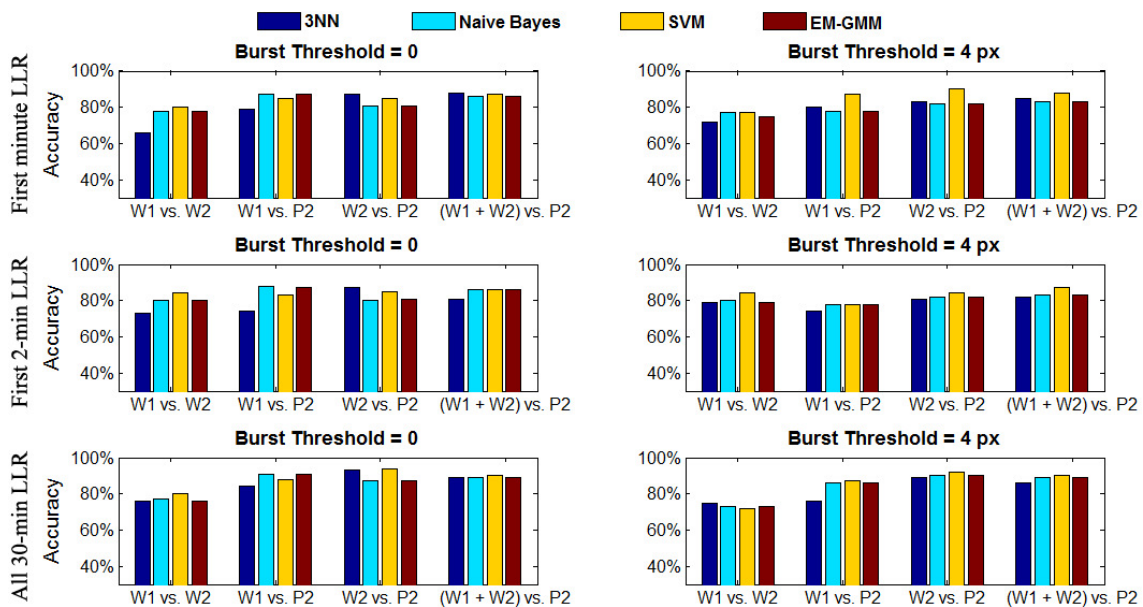

Figure 4: Classification results using the LLR of 8 dpf zebrafish larvae. The parameters are the same with Fig. 3.