**GCT547 Homework 4**

20205102 김한라

1. Perform the same Fitts' law experiment once again as you did in Homework 3. And instead, this time use effective target width (We) to fit the model to the data. Is model fitting more successful? Provide the evidence for the claim based on R2, adjusted R2, cross validation, residual plot, confidence interval via bootstrapping. (50 pts)
2. Implement a steering task application that can measure user performance in both straight tunnel and narrowing tunnel (50 pts)
3. Measure your steering performance in at least 6 different ID (index of difficulty) conditions for each straight tunnel and narrowing tunnel condition (therefore 12 conditions in total). Perform at least 10 trials for each condition. (50 pts)
4. Fit your data to Steering law via the least squares method (you will get *a* and *b*). (50 pts)
5. Present the performance of your parameter estimation in terms of the following aspects: R2, adjusted-R2, k-fold cross validation, residual plot, confidence interval via bootstrapping (100 pts)
6. (BONUS) Design a non-simple tunnel with a specific parametrized curve (not allowed tunnel shapes: straight, narrowing, broadening, spiral, circular) and show that if your steering performance for that tunnel also follows the steering law. (200 pts)

Due date: 10/5 11:59 pm

Submit to: KLMS