

Assignment 1

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2020-11-25

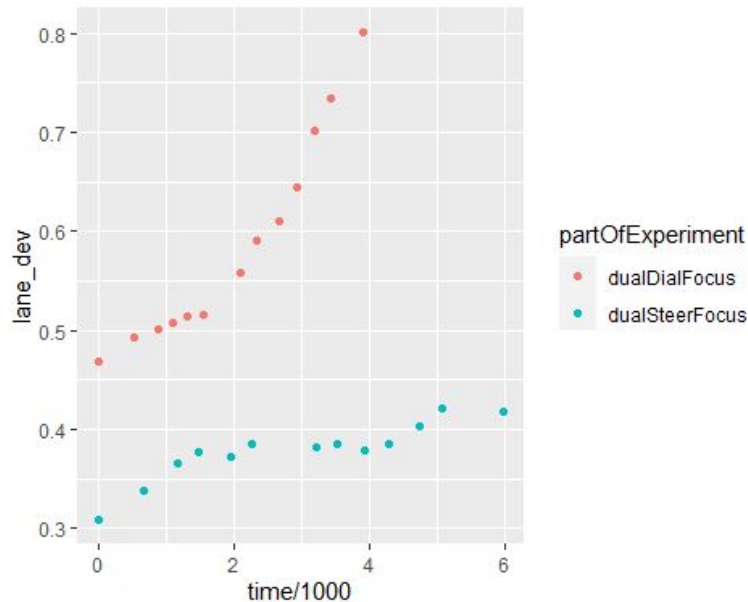
Question 1 – A

##	partOfExperiment	Mean	SD	SE
##	dualDialFocus	3.43	0.896	0.259
##	dualSteerFocus	5.07	1.32	0.380

Question 1 - B

##	partOfExperiment	Mean	SD	SE
##	dualDialFocus	0.588	0.224	0.0648
##	dualSteerFocus	0.378	0.190	0.0550

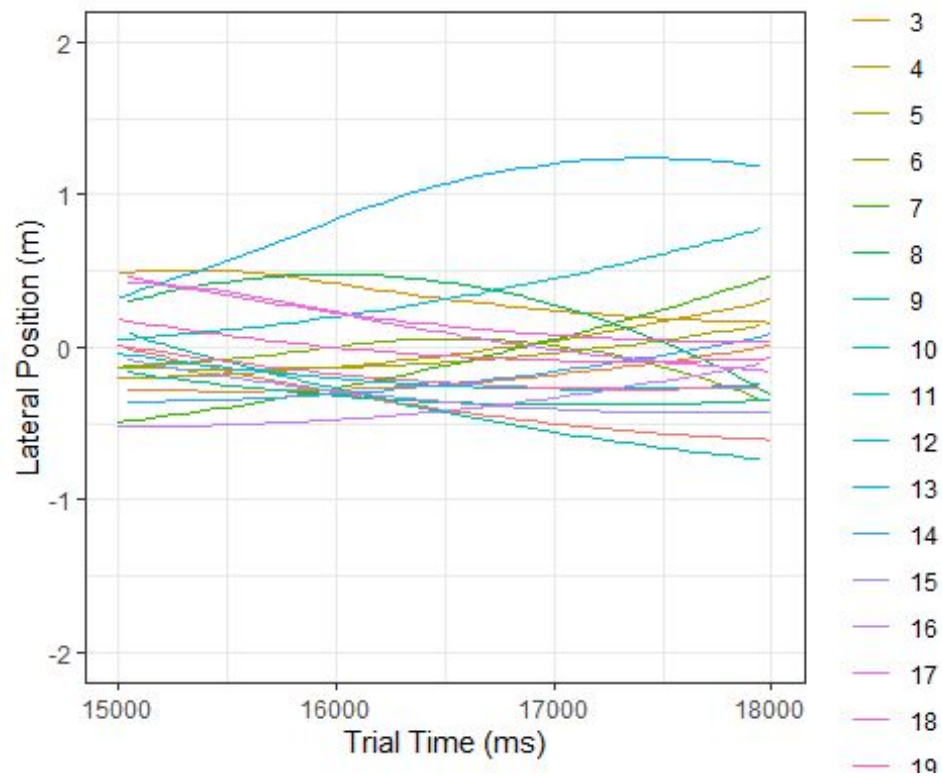
Question 1 – C



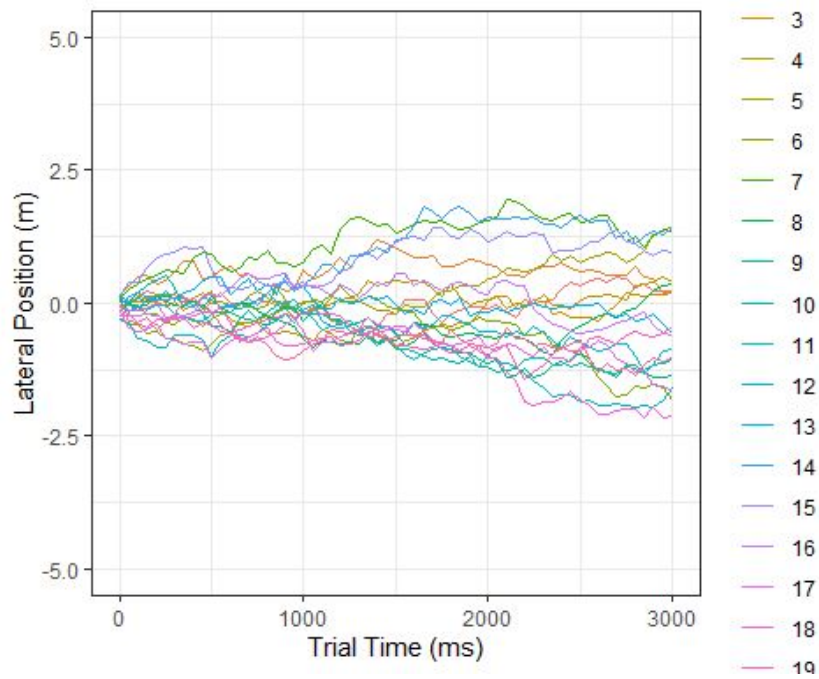
Question 1 – D

The plot in question 1C shows a clear break in data point occurrences on the x-axis between the sixth and the seventh data point. Since the first data point denotes the starting point, these data points describe the car position at times after typing the fifth and sixth digit. The fact that more time passed between these typing actions, suggests that the average participant spent time on some other task, such as reading the next chunk. We therefore expect that the participant did indeed chunk up to the natural breakpoint (up to the non-numeric item between the 5th and the 6th number).

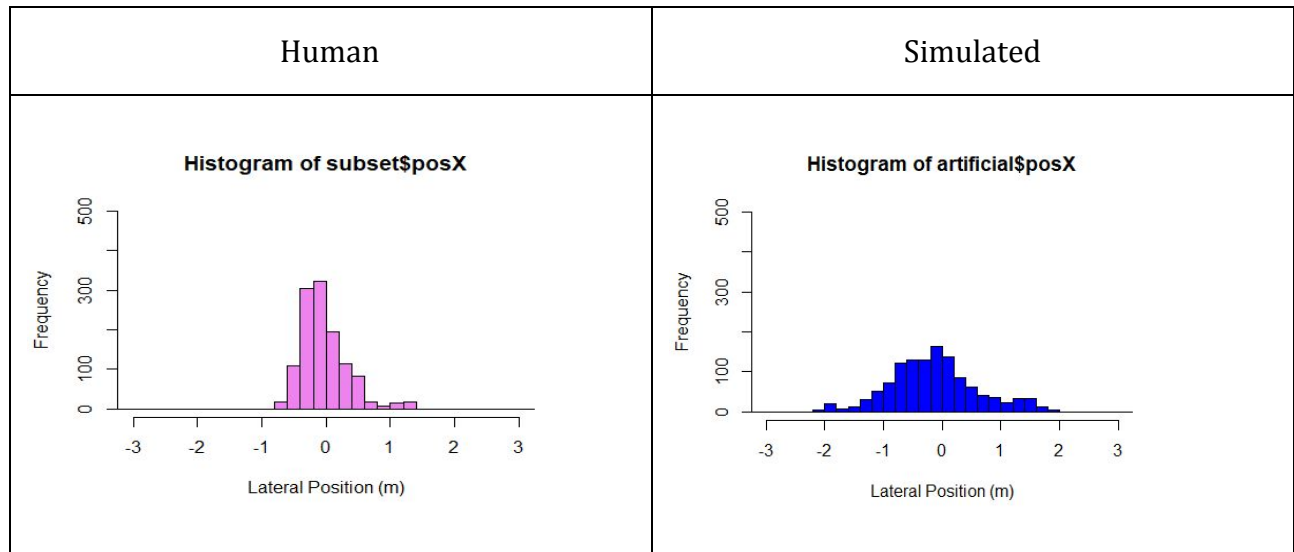
Question 2 - A



Question 2 - B



Question 2 – C



Question 2 - D

#Human

```
##      Mean    SD
##    -0.0331 0.328
```

#Artificial

```
##      Mean    SD
##    -0.140 0.642
```

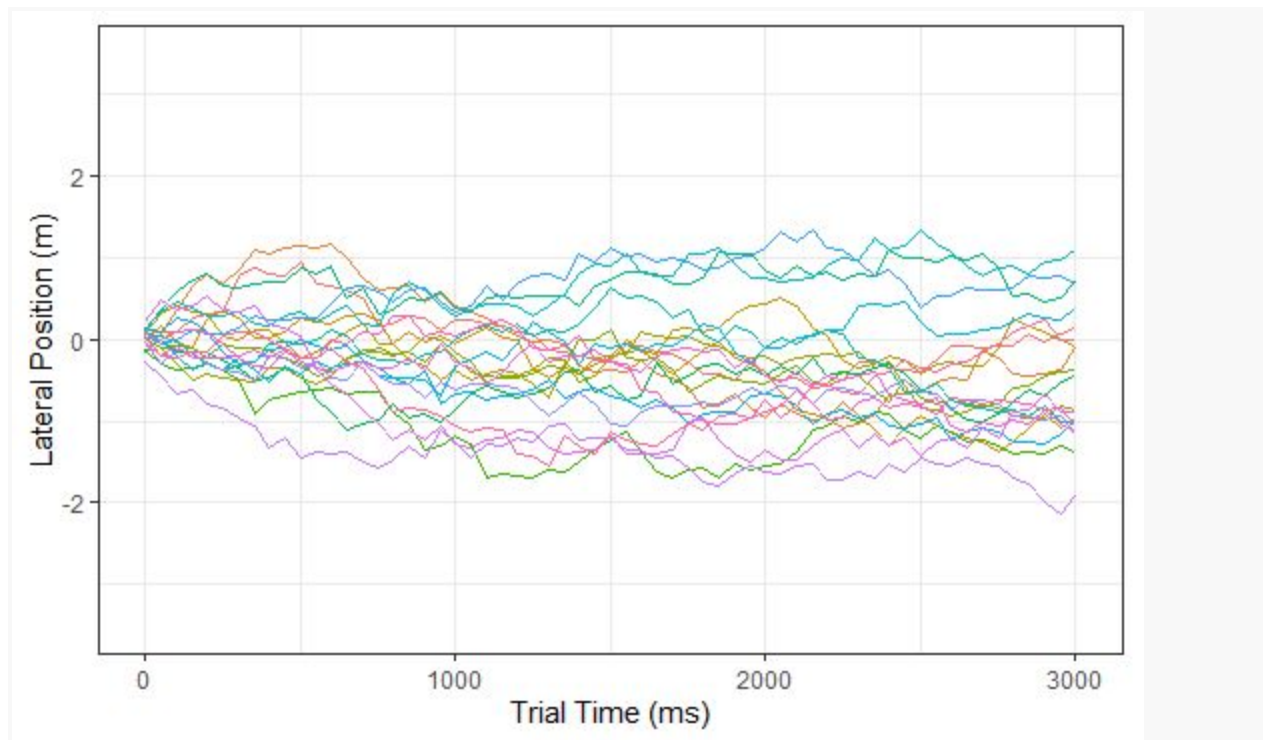
```
### my M and SD
```

```
      Pos_m    SD
1 -0.301 0.552
```

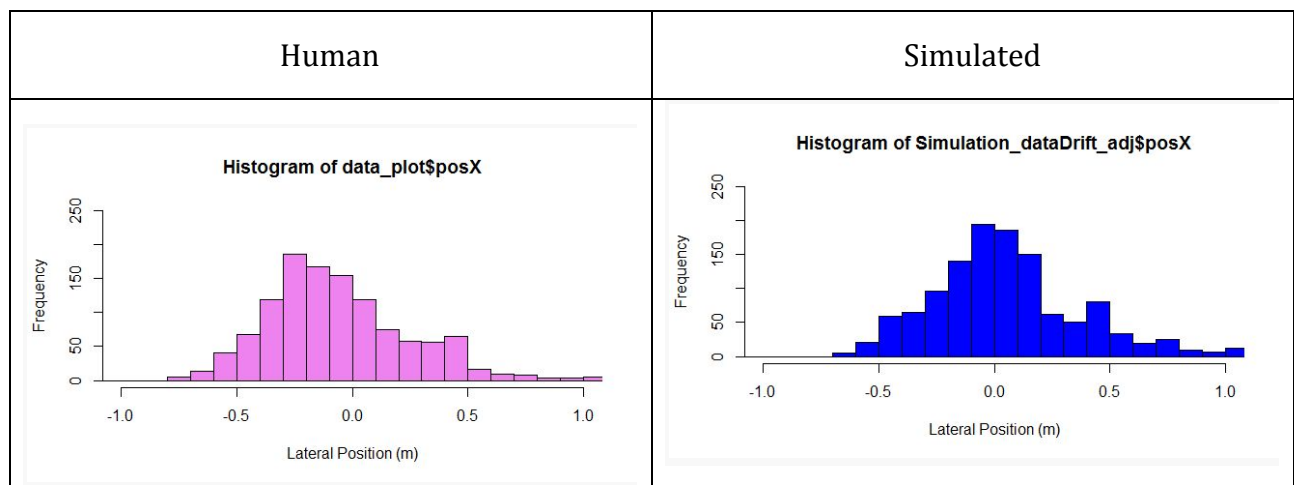
Question 2 - E

(i) SD = 0.048

(ii)



(iii)



(iv) SD = 0.193

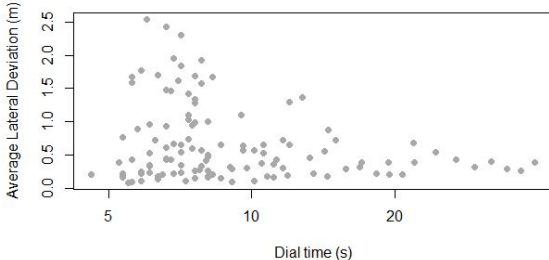
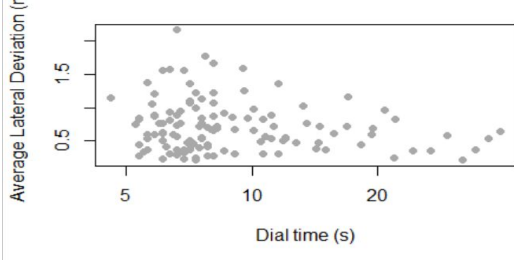
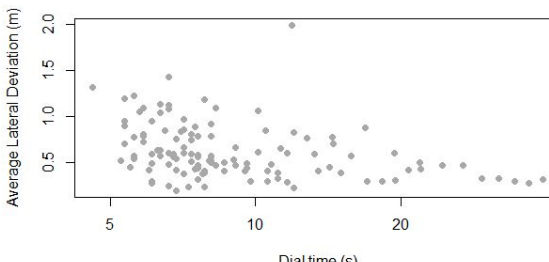
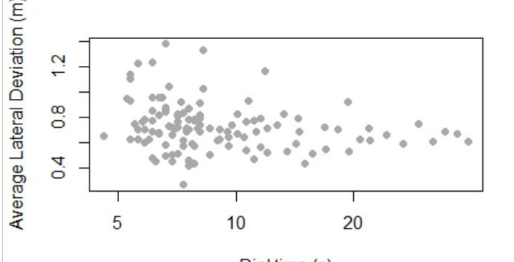
Question 3 - A

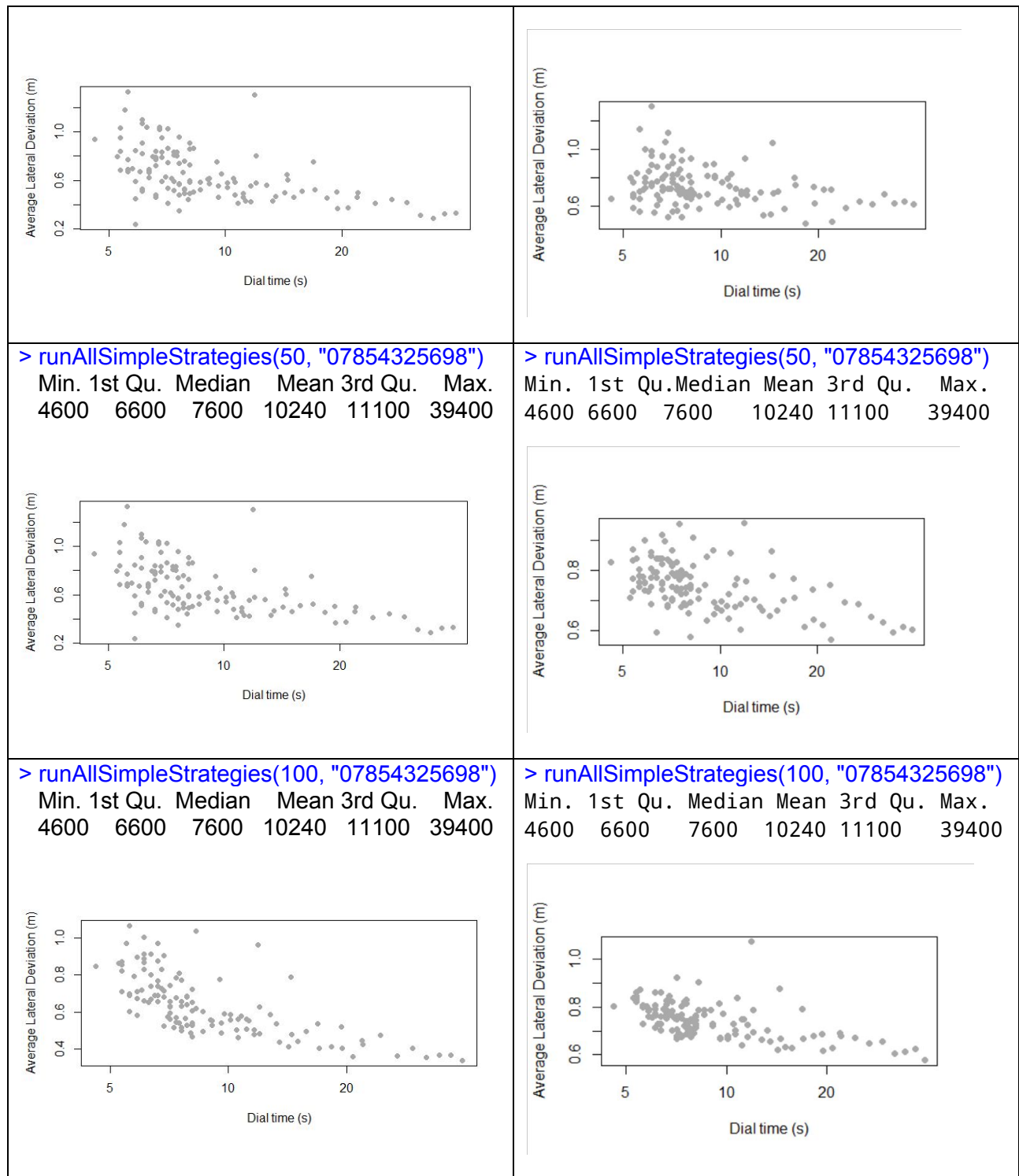
```
##   intervall_mean intervall_median
##             264.             270.
```

Question 3 – B

Since the distribution of the mean interval across digit typed is not normal, the median could be a good alternative. In addition, the extra chunking retrieval cost at the 5th and 6th digit affecting the time performance measure is calculated separately in the model therefore only the within chunk response time is necessary. Since, both are included in the mean, the mean is more biased for this purpose than the median.

Question 4 – A

<div>Dirk's Computer</div> <div>Intel Xeon W3565 @ 3.20GHz 16,0GB Dual-Channel DDR3 Hewlett-Packard 0B4Ch (CPU0 PROCESSOR) 1023MB NVIDIA Quadro 2000 (HP)</div>	<div>Sara's Computer</div> <div>Intel® Core™ i5-8265U CPU @ 1.60GHz 1.80 GHz 8.00 GB</div>
<div>> runAllSimpleStrategies(1, "07854325698")</div> <div>Min. 1st Qu. Median Mean 3rd Qu. Max. 4600 6600 7600 10240 11100 39400</div> <div></div>	<div>> runAllSimpleStrategies(1, "07854325698")</div> <div>Min. 1st Qu. Median Mean 3rd Qu. Max. 4600 6600 7600 10240 11100 39400</div> <div></div>
<div>> runAllSimpleStrategies(5, "07854325698")</div> <div>Min. 1st Qu. Median Mean 3rd Qu. Max. 4600 6600 7600 10240 11100 39400</div> <div></div>	<div>> runAllSimpleStrategies(5, "07854325698")</div> <div>Min. 1st Qu. Median Mean 3rd Qu. Max. 4600 6600 7600 10240 11100 39400</div> <div></div>
<div>> runAllSimpleStrategies(10, "07854325698")</div> <div>Min. 1st Qu. Median Mean 3rd Qu. Max. 4600 6600 7600 10240 11100 39400</div>	<div>runAllSimpleStrategies(10, "07854325698")</div> <div>Min. 1st Qu. Median Mean 3rd Qu. Max. 4600 6600 7600 10240 11100 39400</div>



Question 4 – B

We can say that 50 is a good number of simulations because the Pareto curve is neat enough to identify optimal performance for different trade-offs. Therefore it is ultimately

weighting a trade off between model accuracy and model runtime depends on resources available (time, computer processing capacity etc.)