**IST 772—Final**

On time: ✔️ Name: Stephen Omondi

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|  | 0—Missing | 1—Partly correct | 2—Mostly or entirely correct |
| Initial data exploration (2 pts) | ✔️ |  |  |
| **Proportions (10 pts)** |  |  |  |
| *Question 1* *85%* |  |  | ✔️ |
| *Question 2* *97%* |  |  | ✔️ |
| *Question 5* |  |  |  |
| χ2(1) = 400, p<0.001 | ✔️ | Need to run some kind of statistical test, e.g., χ2 test |  |
| contingencyTableBF | ✔️ |  |  |
| Extract proportions | ✔️ |  |  |
| **Time series (10 pts)** |  |  |  |
| *Question 3* |  |  |  |
| Changepoint analysis x 2 |  | ✔️  cpt.mean would also be illuminating | ✔️ |
| Bayesian changepoint x 2 | ✔️ |  |  |
| *Question 4* Patterns |  |  | ✔️ |
| **T-tests (20 pts)** |  |  |  |
| Data exploration; note skew | ✔️ |  |  |
| *Question 6—allvaccs* |  |  |  |
| t-test |  | ✔️  Running t-test on the resampled data inflates the significance. You should just run it on the raw data. |  |
| Bayesian |  | ✔️  Ditto |  |
| Report results |  | ✔️ |  |
| *Question 7—medical* |  |  |  |
| t-test |  | ✔️  In fact, not a significant difference |  |
| Bayesian |  | ✔️ |  |
| Report results |  | ✔️ |  |
| *Question 8—religious* |  |  |  |
| t-test |  | ✔️ |  |
| Bayesian |  | ✔️ |  |
| Report results |  | ✔️ |  |
| **Logistic regression (20 pts)** |  |  |  |
| *Question 9* |  |  |  |
| glm |  |  | ✔️ |
| Omnibus test |  |  | ✔️ |
| Performance, e.g., R2 |  |  | ✔️ |
| Report and interpret |  |  | ✔️ |
| Log odds |  |  | ✔️ |
| Bayes x 2 |  |  | ✔️✔️ |
| Diagnostics | ✔️ |  |  |
| Report and interpret |  |  | ✔️ |
| Conclusion |  | ✔️  What do you conclude overall? |  |
| **Regular regression (28 pts)** |  |  |  |
| Multi-collinearity x 2 |  | ✔️✔️  Need to do something about multi-colinearity, not just identify it |  |
| *Question 10—conditional* |  |  |  |
| lm |  | Dropping non-significant predictors is not a good practice | ✔️ |
| Diagnostics/outliers |  | ✔️Didn’t check for outliers |  |
| Bayes |  |  | ✔️ |
| Report and interpret |  |  | ✔️ |
| *Question 11—medical* |  |  |  |
| lm |  | Good idea to normalize variables before testing interactions. Also, hard to interpret. | ✔️ |
| Diagnostics/outliers |  |  | ✔️ |
| Bayes |  |  | ✔️ |
| Report and interpret |  |  | ✔️ |
| *Question 12—religious* |  |  |  |
| lm |  |  | ✔️ |
| Diagnostics/outliers |  | ✔️Didn’t check for outliers |  |
| Bayes |  |  | ✔️ |
| Report and interpret |  |  | ✔️ |
| **Summary (10 pts)** |  |  |  |
| *Question 13* |  |  |  |
| Level of vaccination |  | ✔️ |  |
| Private vs. public |  |  | ✔️ |
| Predicting reasons |  |  | ✔️ |
| Bottom line conclusion x 2 |  | ✔️✔️ |  |
| **Total** |  |  |  |
| **Grade** |  | **68/100** | **17/25** |