**EE5373: Data Modeling Using R**

**Fall, 2017**

Department of Electrical and Computer Engineering

**University of Minnesota**

Lab 5: Predicting responses.

Due date: See the due date shown on the class moodle page.

Goal: This lab explores predicting system responses with multi-factor regression models using the CPU DB database.

What to do:

1. Use the regression models that you have already developed to complete the following table showing how well the models from each row predict the results from each column. Fill in each of the x and y values so that x is the mean of the delta values for the prediction and y is one-half of the width of the corresponding 95 percent confidence interval. For example, in the first row, you are to use the model developed from Int1992 data to predict the performance that would be obtained on the Int1992, Int2000, Int2006, and Fp2000 data. Use f = 0.5 when selecting your training sets.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Int1992 | Int2000 | Int2006 | Fp2000 |
| Int1992 | x (± y) | x (± y) | x (± y) | x (± y) |
| Int2000 | x (± y) | x (± y) | x (± y) | x (± y) |
| Int2006 | x (± y) | x (± y) | x (± y) | x (± y) |
| Fp2000 | x (± y) | x (± y) | x (± y) | x (± y) |

1. What can you say about the models’ predictive abilities, based on these results? For example, how well does a model developed from the integer (Int) benchmark results predict the performance of the integer and floating-point (Fp) benchmarks from the same year? What about the Fp benchmark predicting the Int benchmark results? What about predictions from one generation to another generation (that is, from one year to another year)? Any other interesting results you see?

What to turn in for grading:

Write a short lab report that includes the completed table from above, and that answers all of the questions. Upload the pdf file with your report to moodle by the due date.