## Penn Treebank Validation (Lower) & Test Correlation Matrix

|             | WIND Perplexity Skip Thought Transformer BLEU-2 BLEU-3 InterSent BLEU-A AV |       |       |       |       |       |        | D.A. AN.C | osine  |              |
|-------------|--|-------|-------|-------|-------|-------|--------|-----------|--------|--------------|
|             | OMN  | belbi | SkiP1 | Trans | BLEL  | BLEL  | Intere | BLEL      | , AN.C | ) <b>- 1</b> |
| WMD         | 1  | -0.21 | 0.25  | 0.54  | -0.4  | -0.43 | 0.09   | -0.11     | 0.25   | - 0.8        |
| Perplexity  | 0.2  | 1     |       | -0.74 | -0.81 | -0.78 | -0.78  | -0.87     | -0.67  | - 0.6        |
| SkipThought | 0.16   | -0.38 | 1     | 0.85  | 0.03  | 0.34  | 0.23   | 0.1       | 0.49   | - 0.4        |
| Transformer | 0.2  | -0.59 | 0.16  | 1     | 0.82  | 0.74  | 0.21   | 0.4       | 0.36   | - 0.2        |
| BLEU-2      | 0.06   | -0.96 | 0.16  | 0.35  | 1     | 0.77  | 0.81   | 0.93      | 0.53   | - 0          |
| BLEU-3      | 0.65   | -0.81 | 0.24  | 0.49  | 0.94  | 1     | 0.72   | 0.93      | 0.55   | 0.2          |
| InferSent   | -0.58  | -0.83 | 0.54  | 0.46  | 0.53  | 0.65  | 1      | 0.84      | 0.64   | 0.4          |
| BLEU-4      | 0.4  | -0.97 | 0.35  | 0.58  | 0.43  | 0.46  | 0.83   | 1         | 0.69   | 0.6          |
| Av-Cosine   | 0.38   | -0.74 | 0.87  | 0.96  | 0.18  | 0.33  | 0.65   | 0.86      | 1      | -0.8         |