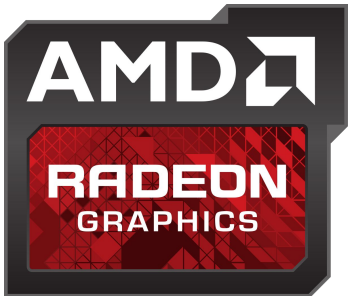
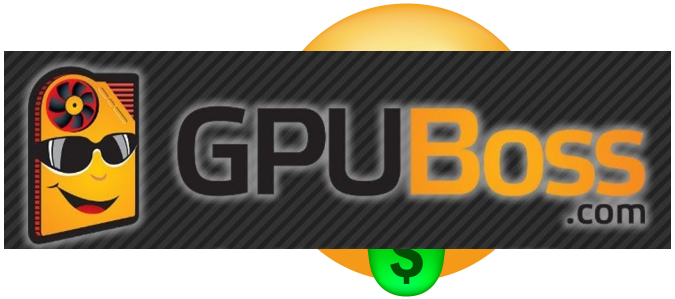
# Tackling GPUBoss.com Review Scores

October 12, 2018

# Imagine...





# Imagine...

**GPU Specifications**

| | | |
|---|---|---|
| Feature 1 | Feature 2 | Feature 3 |
| Feature 4 | Feature 5 | Feature 6 |
| Feature 7 | Feature 8 | Feature 9 |
| Feature 10 | Fe ure | Feature 12 |
| Feature 13 | Feature 14 | Feature 15 |
| Feature 16 | Feature 17 | Feature 18 |
| Feature 19 | Feature 20 | Feature 21 |

**40+**

**8.6**
Out of 10
GPUBOSS SCORE

# Imagine...

**GPU Specifications**

| | | |
|---|---|---|
| Feature 1 | Feature 2 | Feature 3 |
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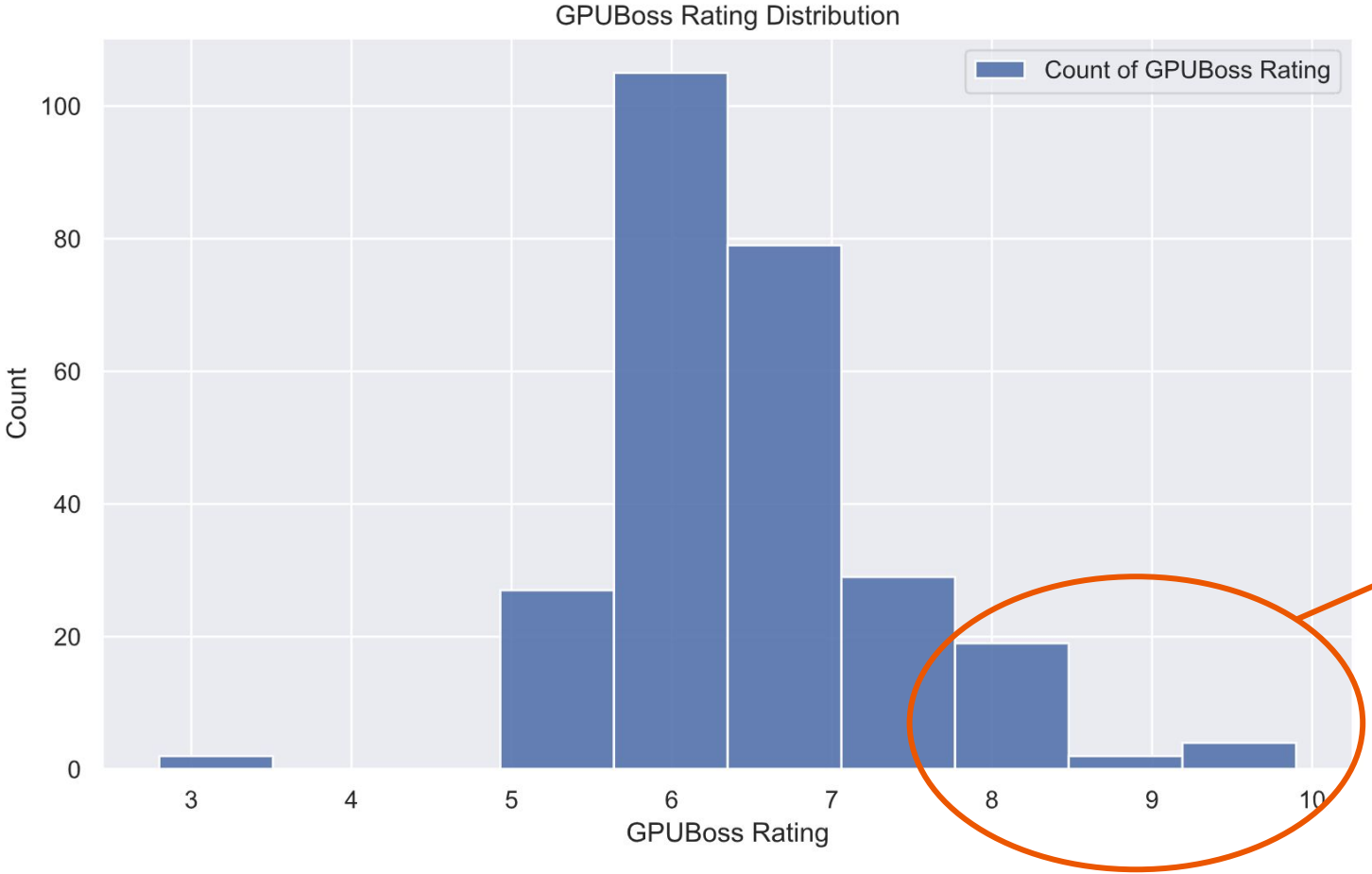
5

**8.6**
Out of 10
GPUBOSS SCORE

ye5




- Min Score: **2.8**
- Max Score: **9.9**
- Mean: **6.5**

Number of GPUs with score > 8.0: **11**

# Goal

Define Graphics Processing Unit (GPU) specifications that result in **higher** review scores from reputable website GPUBoss.com

# Approach

Capture:

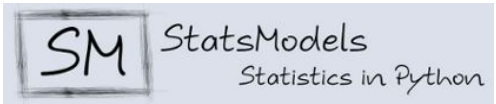
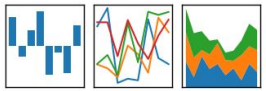
- GPUBoss Review Scores
- Benchmarks
- GPU Specifications

1. Fit
2. Validate
3. Transform

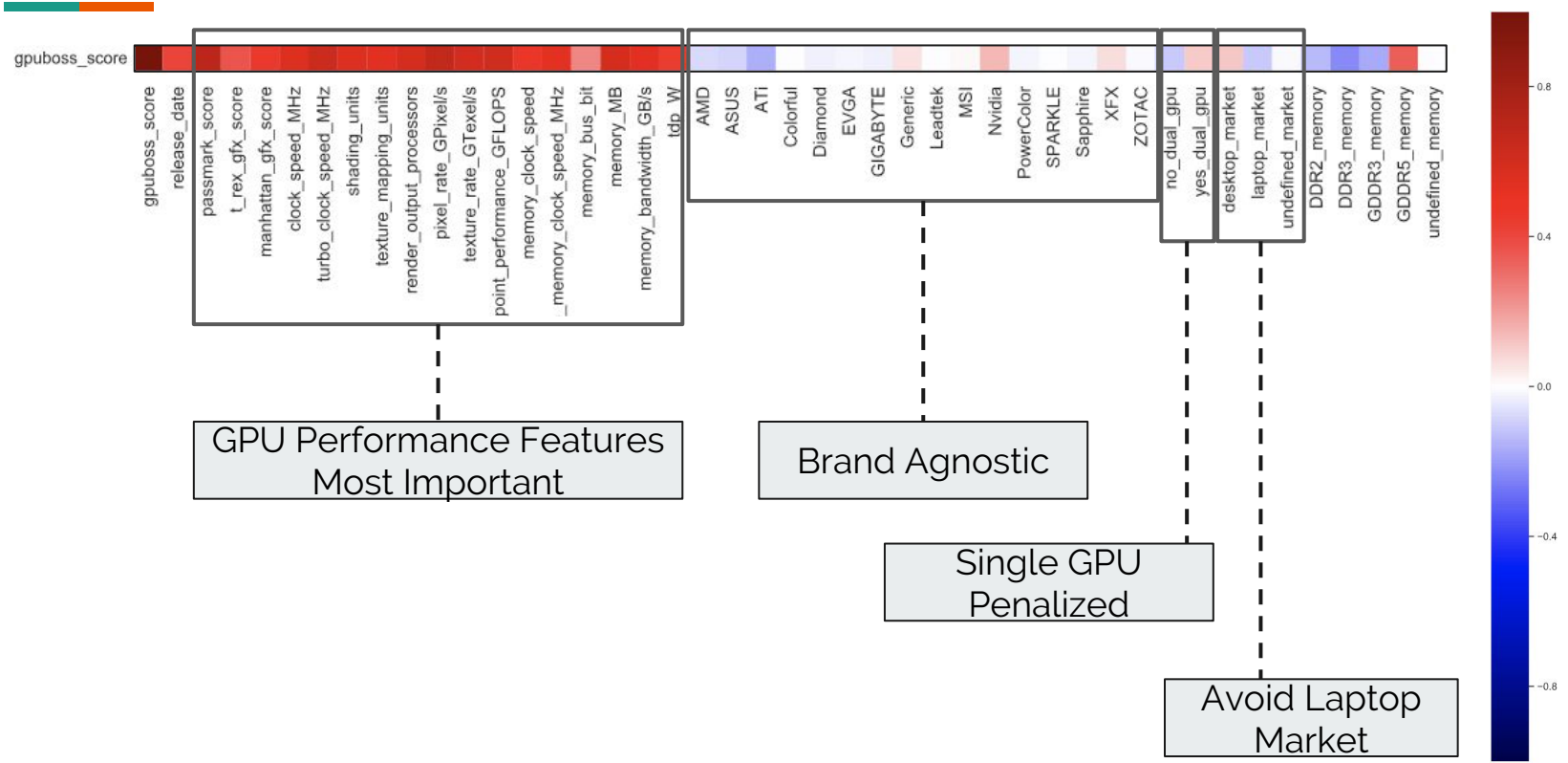
- Feature 1
- Feature 2
- Feature 3
- Feature 4
- Feature 5

Data → Model → Predict

# Tools

| Tools | Purpose |
| --- | --- |
| | • Data Scraping |
|   pandas $y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$  | • Model<br>• Regularization<br>• Feature Transformation |
| matplotlib | • Data Visualization |

# Correlation Heatmap



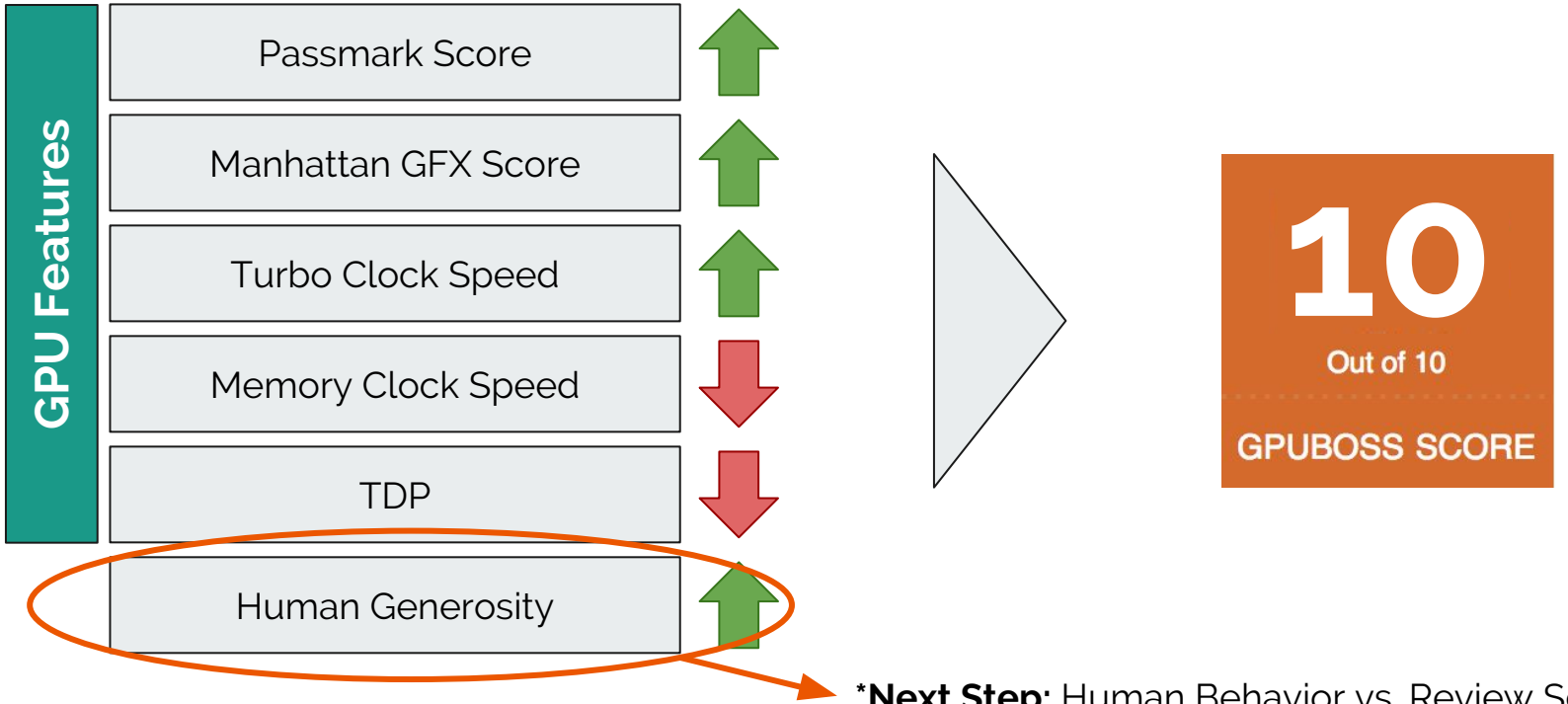
# Final Results

| GPU Feature | Beta Coef |
|---|---|
| Passmark Score | 0.4737 |
| Manhattan GFX Score | 0.2637 |
| Turbo Clock Speed | 1.7263 |
| Memory Clock Speed | -0.2651 |
| TDP | -0.2098 |

* all P-value equal 0.020 or less

| Model Performance | Score |
|---|---|
| Adjusted R-squared | 0.481 |
| Probability (F-statistic) | 2.12e-36 |
| Condition Number | 795 |

# Conclusion




*__Next Step:__ Human Behavior vs. Review Scores

# Questions?

# Appendix

# Resources

- GPUBoss website - URL
- Passmark score - URL
- GFX benchmark - URL
- GPU specifications - URL
- TDP - URL
- How High Does R-Squared Need To Be? - URL

# Statsmodel Summary

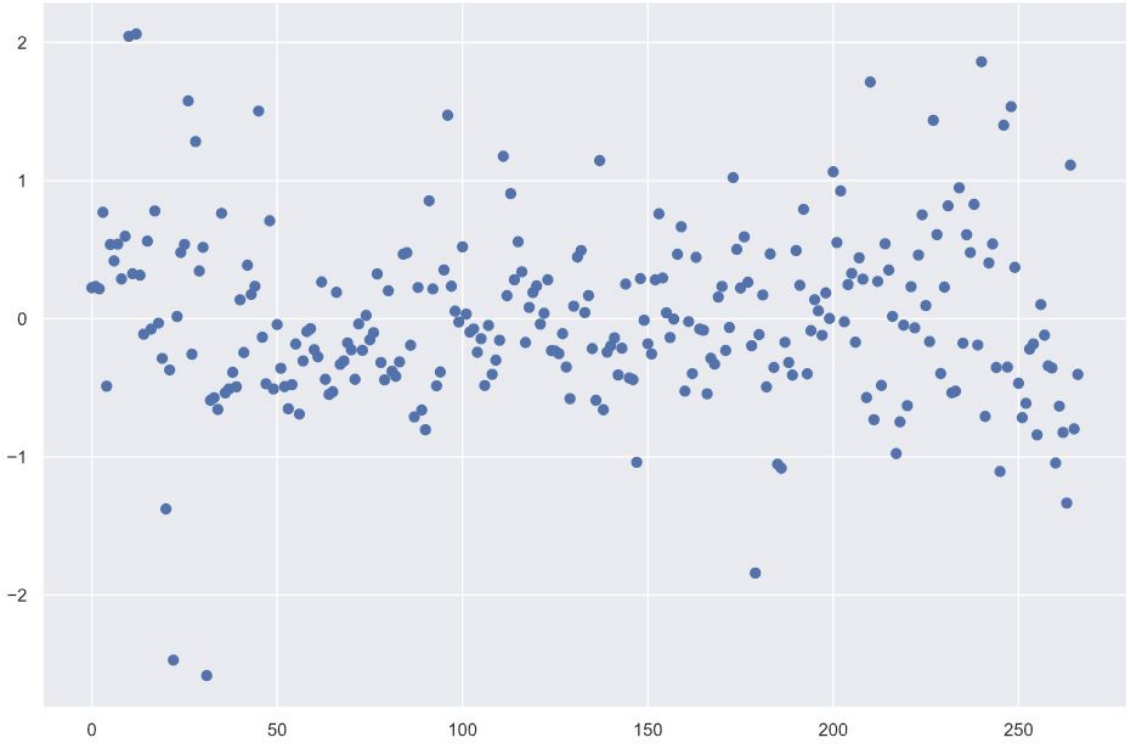
OLS Regression Results

| | | | |
|---|---|---|---|
| **Dep. Variable:** | y | **R-squared:** | 0.491 |
| **Model:** | OLS | **Adj. R-squared:** | 0.481 |
| **Method:** | Least Squares | **F-statistic:** | 50.35 |
| **Date:** | Thu, 11 Oct 2018 | **Prob (F-statistic):** | 2.12e-36 |
| **Time:** | 07:39:14 | **Log-Likelihood:** | -252.65 |
| **No. Observations:** | 267 | **AIC:** | 517.3 |
| **Df Residuals:** | 261 | **BIC:** | 538.8 |
| **Df Model:** | 5 | | |
| **Covariance Type:** | nonrobust | | |

| | coef | std err | t | P>\|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **Intercept** | -7.8704 | 1.930 | -4.079 | 0.000 | -11.670 | -4.071 |
| **X_reduced_3[0]** | 0.4737 | 0.098 | 4.849 | 0.000 | 0.281 | 0.666 |
| **X_reduced_3[1]** | 0.2637 | 0.089 | 2.958 | 0.003 | 0.088 | 0.439 |
| **X_reduced_3[2]** | 1.7263 | 0.309 | 5.587 | 0.000 | 1.118 | 2.335 |
| **X_reduced_3[3]** | -0.2651 | 0.113 | -2.336 | 0.020 | -0.489 | -0.042 |
| **X_reduced_3[4]** | -0.2098 | 0.084 | -2.500 | 0.013 | -0.375 | -0.045 |

| | | | |
|---|---|---|---|
| **Omnibus:** | 20.156 | **Durbin-Watson:** | 1.799 |
| **Prob(Omnibus):** | 0.000 | **Jarque-Bera (JB):** | 66.744 |
| **Skew:** | 0.117 | **Prob(JB):** | 3.21e-15 |
| **Kurtosis:** | 5.438 | **Cond. No.** | 795. |

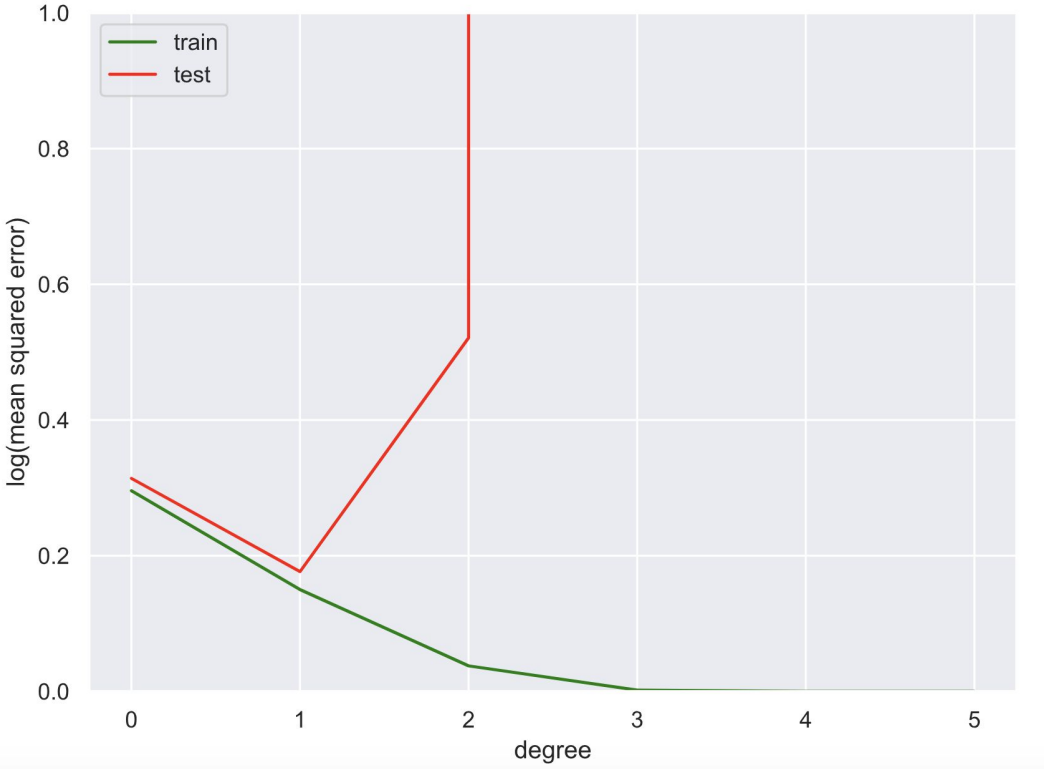
# Residual Plot




**X-axis:** row of data

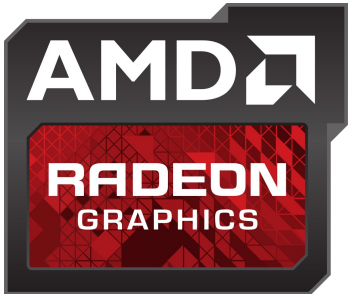
**Y-axis:** residual (actual value - predicted value)

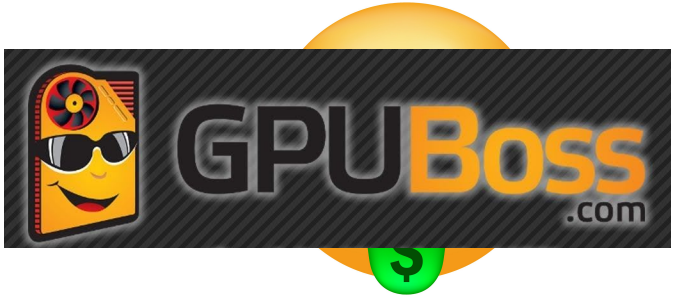
# Polynomial Regression Check



# Graveyard

# Imagine...





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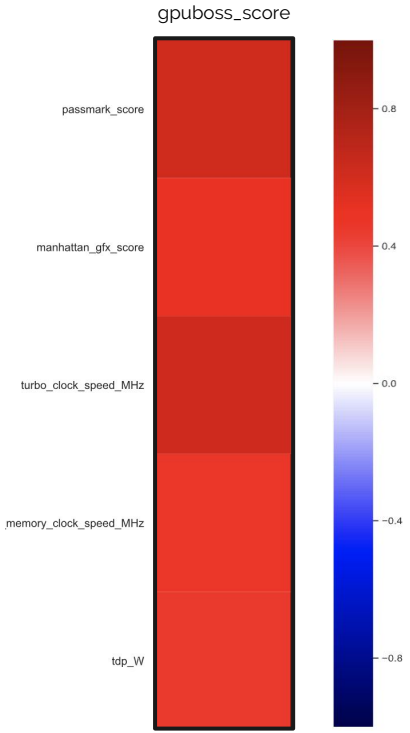


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# Next Steps

- MSRP Price
- News
- Other Reputable Reviewers