

Predicting Desktop Prices

Luke Tibbott







Motivation

- Business
- Computers are cool



Data

 <p>Lenovo Desktop Computer ThinkCentre M715q (10M30009US) A12-Series APU</p> <p>5.0 (1)</p> <p>\$681.91 \$498.99 (22 Offers)</p> <p>Save: 27%</p> <p>Free Shipping</p> <p>VIEW DETAILS</p> <p>Compare</p>	 <p>Lenovo Desktop Computer IdeaCentre 510A-15ICB (90HV0000US) Intel Core i7 8th</p> <p>Free Intel Performance Software Bundle w/ purchase, limited offer</p> <p>\$899.99 \$831.68 (22 Offers)</p> <p>Save: 8%</p> <p>\$9.99 Shipping</p> <p>VIEW DETAILS</p> <p>Compare</p>	 <p>Lenovo Desktop Computer ThinkCentre M710e (10UR001MUS) Intel Core i3 7th</p> <p>5.0 (1)</p> <p>\$489.00 \$454.72 (41 Offers)</p> <p>Save: 7%</p> <p>Free Shipping</p> <p>VIEW DETAILS</p> <p>Compare</p>	 <p>Refurbished: Lenovo Grade A Desktop Computer M82 Intel Core i5 3rd Gen 3470 (3.20 GHz) 8</p> <p>\$174.99 \$3.99 Shipping</p> <p>ADD TO CART</p> <p>Compare</p>
---	---	---	--

Model	
Brand	DELL
Series	OptiPlex
Model	3050 (K01HD)
Part Number	K01HD
Quick Info	
Type	Business Desktops & Workstations
Form Factor	Mini Tower
Usage	Business
Colors	Black
Processor	Intel Core i5-7500 3.40 GHz
Processor Main Features	64 bit Quad-Core Processor
Cache Per Processor	6 MB L3 Cache
Memory	8 GB DDR4 2400
Storage	1 TB 7200 RPM
Optical Drive	8x DVD+/-RW 9.5 mm Optical Disk Drive
Graphics	Intel HD Graphics 630
Operating System	Windows 10 Pro 64-Bit

Model design

- Cross validated linear regression
- Standard Scaling
- Feature engineering



Results

- R^2 - .74
- MSE - 3882
- Performs well in real world



Conclusions

- Low RAM = cheap computer
- High capacity SSDs are expensive
- Processors with many cores are expensive



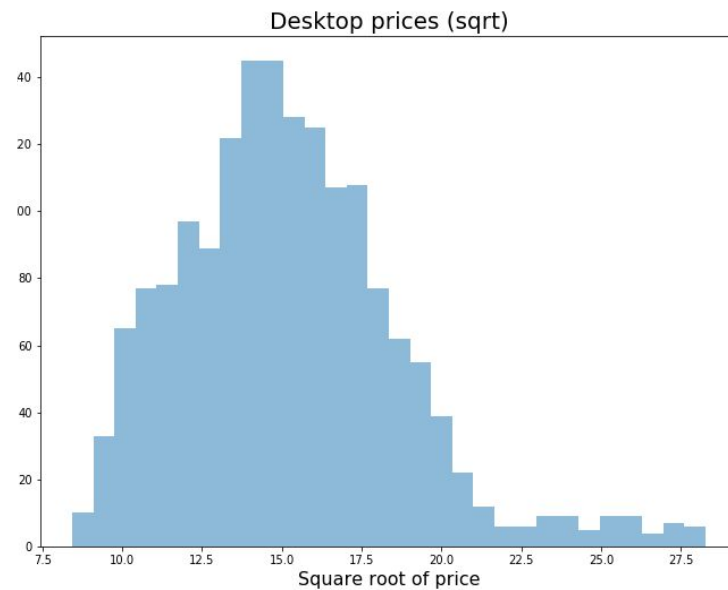
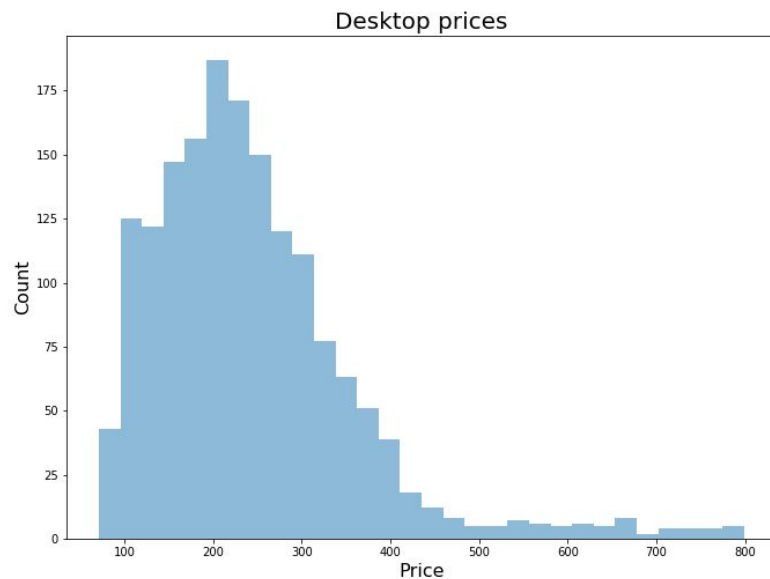
Next steps

- GPU data
- Different brands
- Experiment with more feature engineering

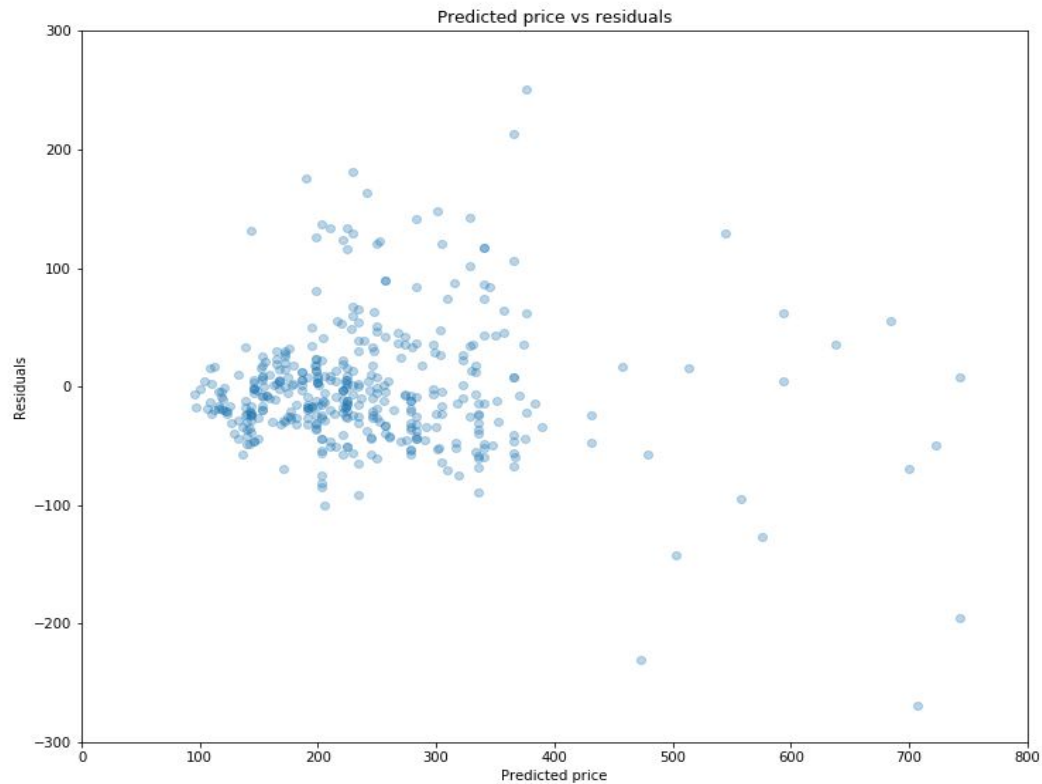
Thank you!

Appendix

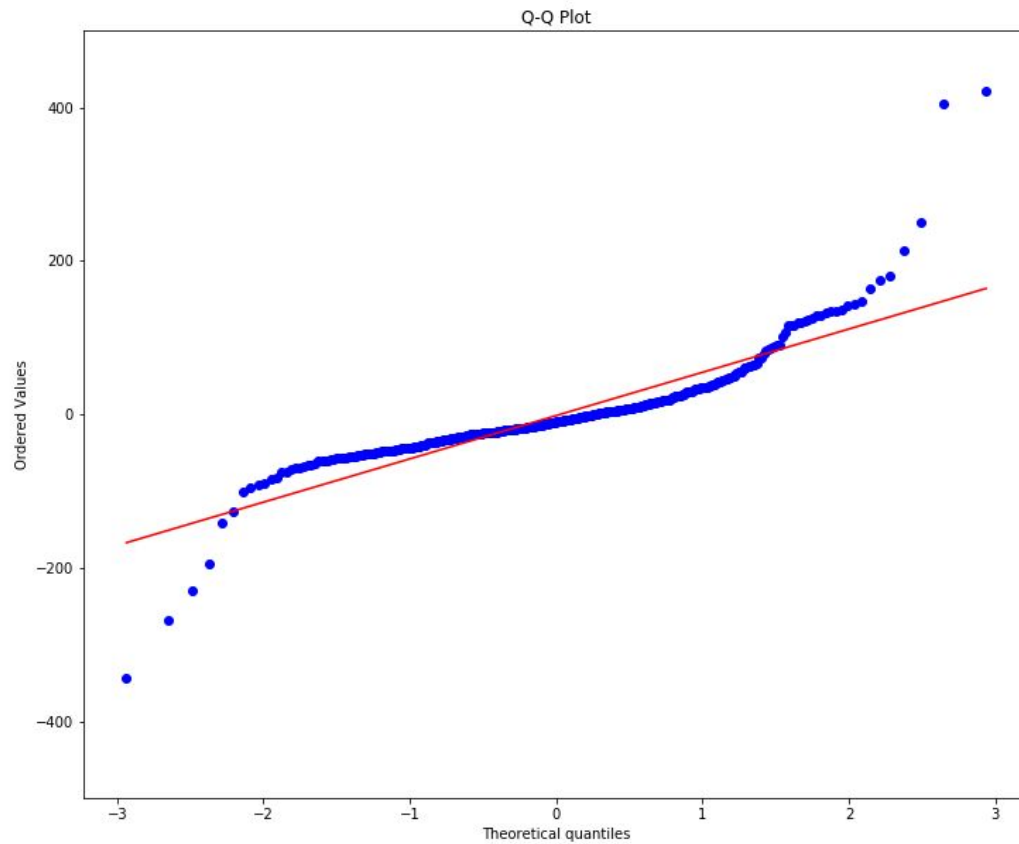
Response transform



Residual plot



Q-Q Plot



Variables

- Price
- Number of cores in processor
- Speed of processor
- Memory capacity
- Storage capacity
- SSD or not
- Integrated graphics or not
- Nvidia graphics or not
- $(\text{SSD capacity})^2$
- $(\text{Number of cores} * \text{speed})^2$
- DDR4 RAM or not
- Presence of both SSD and DDR4
- Presence of both Nvidia and a SSD