For those wishing to learn either the R or Python computer languages from scratch, the following resources are available:

EdX – This website has many free courses, not just in R and Python but in multiple other interesting areas- some of which may tie in to your use of R and Python. It is definitely worth checking out.
Coursera - Python – You can find various courses on Python here. The first one is very basic (good for beginners) and there are also more complex ones.
Coursera - R – And here you can find various courses on R. The syllabi of this and the previous resource also suggest various textbooks that you may follow.

If you are unsure which to learn, here are some basic differences to help you make up your mind, depending upon your objectives and which operating system you prefer:

R will be more useful if your end goal is to do statistical analysis, machine learning, and Deep Learning. It is more used by statisticians than **Python** is, and is more MS-DOS oriented. **R** is more advanced than **Python** for statistical modelling of generalised linear mixed models.

Python, on the other hand, is better for dealing with a large variety of data sources and allows for easier interface with other programming languages. It is more used by data scientists than **R** is, and is more UNIX-oriented. **Python** has an easier syntax to learn than **R** (according to popular opinion; your mileage may vary), so you may want to choose **Python** if you are generally not as experienced in programming. It also contains several machine learning libraries:

TensorFlow – Google's software for development of Deep Learning in machine learning.
PyTorch – Accelerated tensor (N-dimensional array) computations and Deep Learning.
Theano – Efficient definition, optimisation, and evaluation of mathematical expressions involving N-dimensional arrays.
Scikit-learn – Basic machine learning methods, including GLasso and stochastic gradient descent.