**Week 5 Discussion**

In today’s competitive data science climate, it is important to have as many tools in your toolbelt as possible. Compare and contrast the benefits of using either R or Python for statistical analysis and machine learning. In which cases should you use R? In which cases should you use Python?

In today’s competitive data science climate, it is beneficial to understand both R and Python, however there are definitive differences in the two languages. The use of each really boils down to *what* a data scientist is attempting to accomplish, and *why*.

On the one hand, the use of Python is ideal for developing applications, building machine learning pipelines, and conducting advanced data analysis because it comes with built-in data structures, dynamic typing (a process wherein type checks are done during the runtime), and binding (mapping of different objects with one another) [1]. Python also has a very vast user base and is a popular choice amongst a large community. This is important, especially to a beginner, because documentation and explanations are vast and readily available online. R, on the other hand, is a programming language for statistical analysis or computing and graphics [1]. In other words, R is an optimal choice for statistical modeling and plotting the results of said statistical models. Additionally, it has significantly less libraries which can be seen as an advantage for some in comparison to the vast number of libraries in Python. For those who practice in the field of statistics and mathematics, R is an incredibly powerful tool.

In conclusion, it’s important to understand *what* we’re trying to do as data scientists. R can, and should be used for statistical modeling, plotting, and analysis. Python can be widely used for data analysis, applications development, machine learning, deep learning, and large-scale web applications.

Resources

1. *Python vs R: Know the difference*. InterviewBit. (2024, January 4). https://www.interviewbit.com/blog/python-vs-r/