Using R services with Machine Learning

Eng Teong Cheah
MVP Visual Studio &
Development Technologies

Agenda

Overview of R and R server
Using R with SQL Server

Overview of R and R Server

Microsoft R Client

Microsoft R Client is a free, community-supported, data science tool for high performance analytics.

R Client is built on top of Microsoft R Open so you can use any open-source R package to build your analytics.

Additionally, R client includes the powerful RevoScaleR technology and its proprietary functions to benefit from parallelization and remote computing.

Microsoft R Client

R Client allows you to work with production data locally using the full set RevoScaleR functions, but there are some constraints.

Data must fit in local memory, and processing is limited to two threads for RevoScaleR functions.

To work with larger data sets or offload heavy processing, you can access a remote production instance of Machine Learning Server from the command line or push the compute context to the remote server.

Using R with SQL Server

SQL Server Machine Learning Service

SQL Server Machine Learning Service is an embedded, predictive analytics and data science engine that can execute R and Python code within a SQL Server database as stored procedures, as T-SQL script containing R or Python statements, or as R or Python code containing T-SQL.

SQL Server Machine Learning Service

The key value proposition of Machine Learning Services is the power of its proprietary packages to deliver advanced analytics at scale, and the ability to bring calculations and processing to where the data resides, eliminating the need to pull data across the network.

SQL Server Machine Learning Service

There are two options for using machine learning capabilities in SQL Server:

SQL Server Machine Learning Services (In-Database) operates within the database engine instance, where the calculation engine is fully integrated with the database engine. Most installations are this option.

SQL Server Machine Learning Service

There are two options for using machine learning capabilities in SQL Server:

SQL Server Machine Learning Server (Standalone) is Machine Learning Server for Windows that runs independently of the database engine. Although you use SQL Server Setup to install the server, the feature is not instance-aware. Functionally, it is equivalent to the non-SQL Server Microsoft Machine Learning Server for Windows.
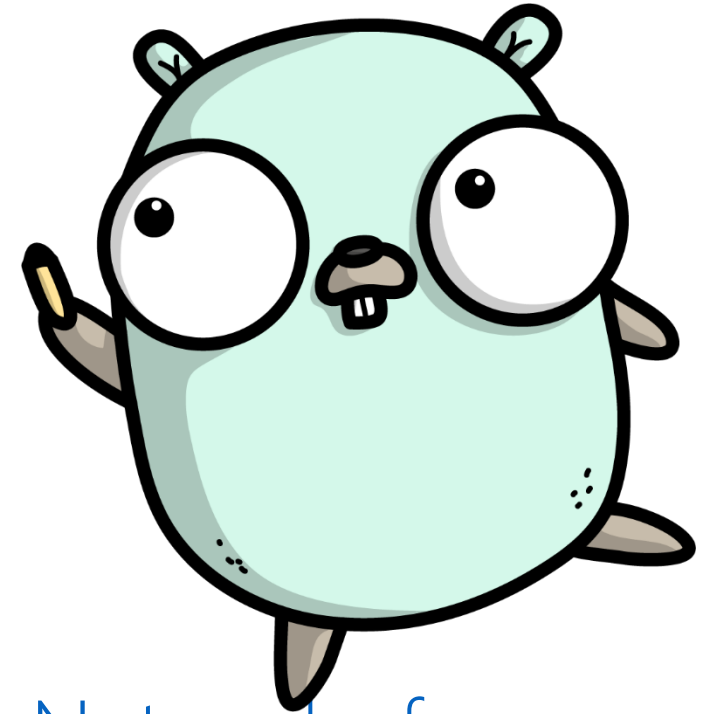
Resources

TutorialsPoint

Microsoft Docs

Lecture Collection | Convolutional Neural Networks for Visual Recognition(Spring 2017)

Python Numpy Tutorial

Image Credits: @ashleymcnamara

Thank you

Eng Teong Cheah
Microsoft MVP Visual Studio & Development Technologies
Twitter: @walkercet
Github: https://github.com/ceteongvanness
Blog: https://ceteongvanness.wordpress.com/
Youtube: http://bit.ly/etyoutubechannel