# OPEN DATA SCIENCE CONFERENCE

Burlingame I November 2nd 2017


@ODSC


@WinVectorLLC


@RStudio

Nov 02
2:00 PM
Room T2

Modeling big data with R, sparklyr, and Apache Spark

BIG DATARINTERMEDIATE

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Co-author of Practical Data Science with R

Part 7: Advanced topics

# Plan

- Work through some extra topics
  - Using SparkR for R user defined functions
  - Using Spark SQL directly
  - Using the Sparklyr programming extension interface to directly call Java/Scala in Spark.
- Remind you of topics and resources

# Work through markdown together

- Exercises/solutions/06-Spark-Extension.Rmd

# What we have achieved in this workshop

- We have worked through `dplyr` in detail.
- We applied `dplyr` data manipulation methods in a big-data environment (`Spark` / `SparklyR`).
- We ran supervised machine learning experiments in big-data environments (`SparkML`).
- We learned how to extend and use `Spark` more directly (`Spark SQL, SparklyR` extensions interface, and even a bit or `SparkR`).

# Some links

# This material

- https://github.com/WinVector/ODSCWest2017
  - Detailed local install instructions:
    - README.Rmd
    - Exercises/solutions/RsparklingInstall.Rmd

# RStudio

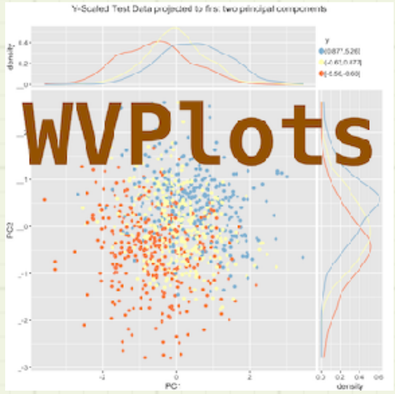
- https://www.rstudio.com
- https://www.rstudio.com/products/rstudio-server-pro/
- https://www.rstudio.com/products/connect/
- https://www.rstudio.com/products/shiny-server-pro/
- https://www.rstudio.com/products/shinyapps/
- https://github.com/rstudio/rstudio

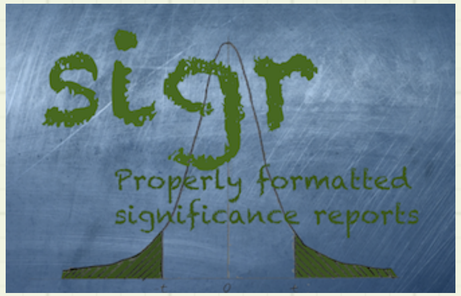

RStudio®

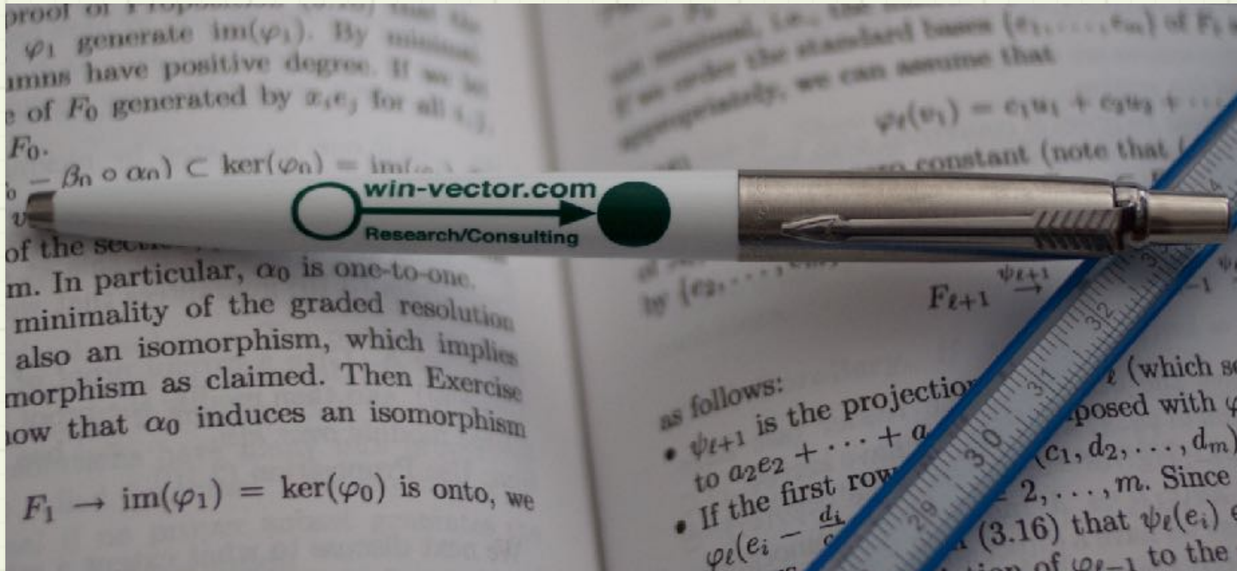
# Win-Vector




- http://www.win-vector.com
- http://www.win-vector.com/blog/
- https://github.com/WinVector
- @WinVectorLLC
- contact@win-vector.com
- Please reach out to us for partnerships
    - Myself or Dr. Lin Chase of Big Tech Strategy (who is working with us).



# SparklyR

- https://www.rstudio.com/resources/cheatsheets/
- http://spark.rstudio.com
- http://spark.rstudio.com/dplyr.html
- http://spark.rstudio.com/extensions.html

# Demos

1. R markdown notebooks with dplyr (NYCFlights13 - Local mode)
   https://beta.rstudioconnect.com/content/1706/

2. Flexdashboard
   http://colorado.rstudio.com:3838/nathan/flights-dash-spark/
   http://colorado.rstudio.com:3838/nathan/flights-dash-rdata/
   https://beta.rstudioconnect.com/content/1439/

3. Comparison of ML classifiers (Titanic - Local mode)
   https://beta.rstudioconnect.com/content/1518/

4. Manipulate data at scale (NYC Taxi - Cluster mode)
   https://beta.rstudioconnect.com/content/1704/

5. End to end analysis (Flights - Cluster mode)
   https://beta.rstudioconnect.com/content/1446/

# Questions? Comments?