Data Science in Consulting. Career Path Guide

CONSTANTINE STOKOLOS, MBA

Agenda

- Who is Constantine Stokolos?
- My Career Path
- Data science : Consulting vs Industry
- How to improve? Resources
- QnA

Who is Constantine Stokolos?

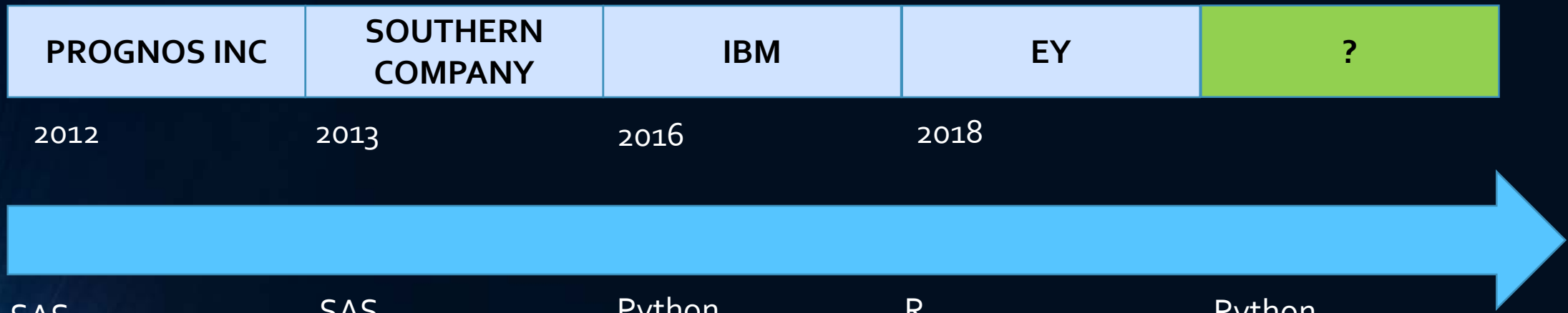
- Senior – Machine Learning Engineer - Advisory DnA - EY
- Ex IBMer
- MBA, Georgia Southern
- Master of Data Science (Applied Statistics), Kennesaw State
- linkedin.com/in/constantinestokolos/

Industries :
- CPG
- Retail & Fashion Goods
- Utilities
- Fraud Prevention
- Postal
- Pharma

Sectors :
- Public
- Government
- Commercial

Clients :
- Nike Inc
- Southern Company OpCos
- USPS
- Social Security Administration
- Pfizer

Career path


PROGNOS INC
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EY
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Keras
MxNET
Python
Scala
Spark
SQL
Tensorflow
Keras
MxNET

Data Science : Consulting vs Industry

Consulting Pros

- Higher Compensation
- Lower technical requirements
- Relatively easy to get in
- Consider yourself a 'product'
- Faster Growth
- Exposure
- Various industries
- Traveling

Consulting Cons

- Sales. Sales. Sales!
- More Work. (45-50 hrs +)
- Client comes first
- Lots of miscellaneous activities that take your time
- Poor working conditions
- Traveling

Data Science : Consulting vs Industry

Industry Pros

- More balanced week work hours
- Office space
- Stable environment
- Decisions are not driven by client
- Quality of solutions are usually higher
- More hours on actual development

Industry Cons

- Lower salaries
- Higher technical requirements
- You are an overhead
- Less exposure
- Slower growth
- Same industry, repetitive tasks

Data Science : Consulting vs Industry

Trends

- Interactive Dashboards & Reporting Automation
- Big Data processing : Spark
- Deep Learning
- NLP (Both Deep Learning and Traditional)
- Cloud Computing : AWS, Azure, others
- BI Enterprise solutions
- Fraud and Cyber Security
- Medical : Image Processing, Anomaly Detection, Pattern Recognition, etc

Data Science : Consulting vs Industry

My opinion on how to proceed :

- Start with consulting
- Get familiar with various industries
- Get Exposed to lots of companies
- Switch to industry if consulting is not for you, about Manager and up, or 5+ years of experience
- Stay in consulting if Sales is what you like. Rewards are huge!
- Stay away from time consuming tasks that don't improve your skill set or boost your resume

Real Life Experience. Must Haves in your Skillset

1. Python :
    1. Core : Numpy, pandas, matplotlib, seaborn
    2. Machine Learning : Sklearn, SciPy
    3. Deep Learning : TensorFlow, Keras, MxNet
2. Spark, SQL:
    1. PySpark
    2. Spark Shell
    3. Spark Mllib
3. R
4. SAS
5. Cloud :
    1. AWS : EC2,EMR, Lambda, S3, others
    2. Microsoft Azure
    3. GPC
6. Hadoop Framework
7. NoSQL & SQL
8. ETL (example Apache Sqoop)

Vitals :

- Linear Algebra
- Stat Methods
- Probability Theory
- Calculus
- Bash (Unix Shell)

https://www.linkedin.com/jobs/view/advisory-services-manager-data-scientist-at-ey-483918204/?utm_campaign=google_jobs_apply&utm_source=google_jobs_apply&utm_medium=organic

Real Life Experience. R, Python, SAS, Others

- Python, SQL &Spark
  - Must have for anything, especially ML, DL
- R
  - when a company tries to switch from SAS or have already some R code in the system
- Scala
  - Native Spark API, master if you want a clean Spark knowledge
- Java
  - Barely used in consulting as development time is too long

https://www.kdnuggets.com/2017/09/python-vs-r-data-science-machine-learning.html

R :
- R good for exploratory
- R - powerful statistical modeling
- R doesn't scale
- R misses some classes and objects
- R No native Deep Learning libraries

SAS:
- Expensive
- Falls behind on availability of new algorithms
- Have their own algorithms engines, black box
- Often you need multiple packages or even software:
  - Eminer
  - Base / EG
  - ETS, HPF, etc

Real Life Experience. Machine Learning vs Big Data

- Ideally you need to be both
- Math background -> Machine Learning Engineers
- Computer Science -> Big Data Architects
- Typically separate positions on a consulting project
- Not so much in the industry
- At the end it is a matter of your preference what you like to do more

Real Life Experience. Continuing Education

- A must do!
- Tools change all the time -> need to keep up and adopt and adjust
- Online Resourses :
  - https://www.udemy.com/ Udemy
  - https://www.coursera.org/ Coursera
- Bootcamps :
  - https://nycdatascience.com/data-science-bootcamp/ New York Data Science Academy
- Meetups :
  - https://www.meetup.com/Advanced-Spark-and-TensorFlow-Meetup-New-York/events/248201412/
- Books :
  - http://www.deeplearningbook.org/ <- FREE
  - http://www-bcf.usc.edu/~gareth/ISL/ <- FREE
  - https://www.manning.com/books/deep-learning-with-r <- Good book for R and Keras
- Mock interviews & Resume Critique
  - https://www.evisors.com/

Your turn!