Introduction to DataScience & Analytics

Ann Venkataraman

Analytics Manager, TD Bank

Agenda:

Introduction to DataScience & Analytics

- ▶ Speaker Introduction
- ▶ What is Data Science?
- ▶ Brief History, importance & truth behind the hype.
- ▶ Applications in different industries.
- ▶ Jobs Ecosystem
- ▶ Skills for different roles.
- ▶ How can you make a career in Data Science?
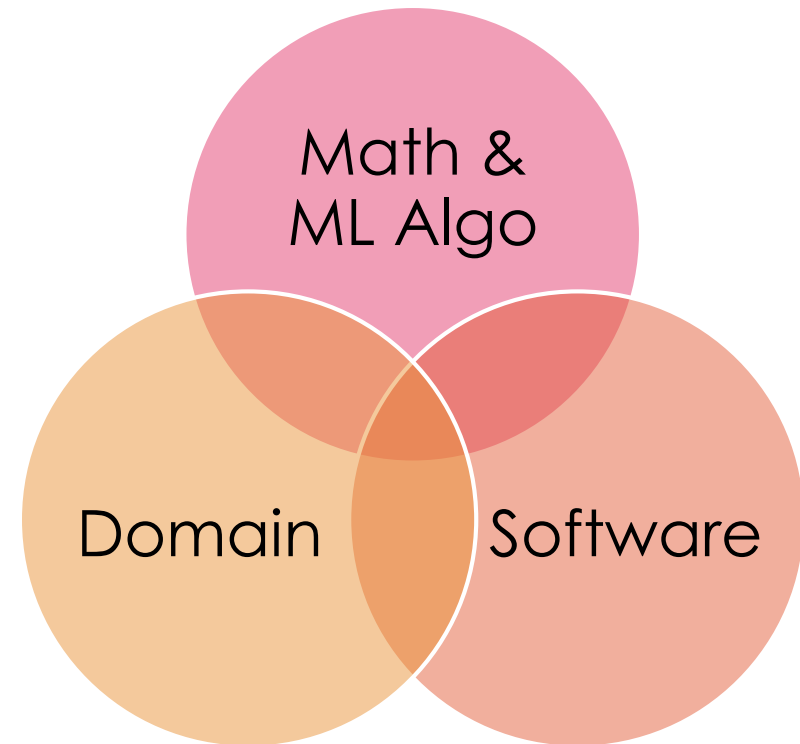- ▶ Common Qs.
- ▶ Links and Resources
- ▶ Q&A

Speaker Bio

- 8+ years exp – strategy analytics
- Award-winning software engineer.
- Nasdaq, BlackRock, Fintech
- Mentor students and Women in STEM
- KubeCon diversity fellow 2019
- Author – "Data Science Jobs"

FINTECH

What is Data Science?
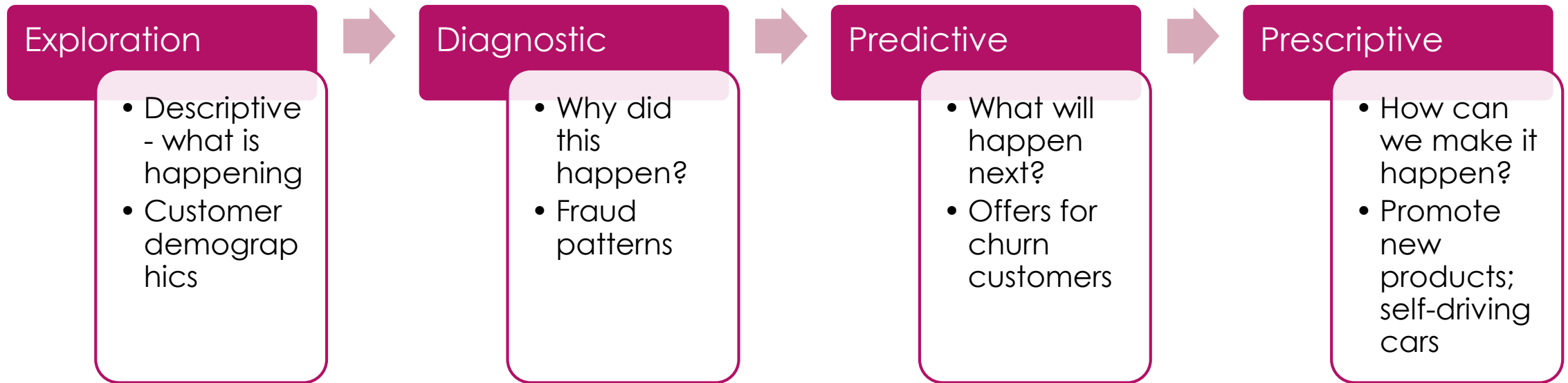
- Millions of data points - Advanced insights

- Analytics / BI
- Machine learning
- Artificial intelligence – automation
- Statistics

- What is important for one domain is not for the other:
  - Petrochemical vs Automated ads.

Math & ML Algo

Domain

Software

History & Hype

- Tech to store and process high-quality data has become cheap and easily available
- Need for hyper-targeting and mass customization – efficiency, profits & limited loyalty
- Game changers – internet, ecommerce and globalization
- Next industrial revolution!

- NO, robots are not going to make you obsolete, but adapting is important.
- New methods of business - Baseline just to stay competitive, leverage to beat the competition.

Stages

Exploration →
- Descriptive - what is happening
- Customer demographics

Diagnostic →
- Why did this happen?
- Fraud patterns

Predictive →
- What will happen next?
- Offers for churn customers

Prescriptive
- How can we make it happen?
- Promote new products; self-driving cars

Real-world Applications

- ❖ ecommerce - amazon, Walmart recommender systems

- ❖ petrochemical - drill holes, sensors preventive maintenance

- ❖ insurance - claims adjusting

- ❖ finance - algorithmic trading, apps for budgeting and cut unnecessary bills!

- ❖ healthcare - cancer early diagnosis, medical treatments with data from world over.

- ❖ Marketing - hyper targeting and product customer churn, chatbots for customer service.

Jobs Ecosystem

New roles :

- ▶ Product managers
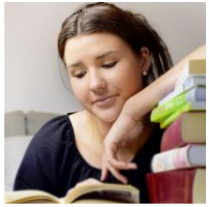- ▶ Data Governance
- ▶ Quant analysts
- ▶ Biostatistician

Data Engineer

Analytics Consultants

Data Viz analyst

Data Scientist

Data/BI Analyst

Managers

Education:
MS? STEM specializations?

Ann Venkataraman - https://www.journeyofanalytics.com/
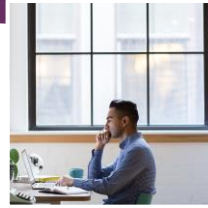
Marketable Skills

- <u>Data Analyst</u>
  - SQL + (R/Python) + Tableau

- <u>Data Scientist:</u>
  - Above + ML Algos.
  - Advanced insights [10:1 rule]
  - Mission critical

- <u>Data Engineer:</u>

- ETL / Databases / APIs
- Software infrastructure, vendor applications
- Streaming data from multiple sources
- Specialized ProdOps

- <u>Analytics Consultants:</u>
  - Leverage data => Profits
  - Multiple software tools & programming languages

How to Start a Career in DS?

CORE
- R/Python + SQL
- Math & Stats
- ML Algo
- Data Viz

ADVANCED
- Communication & Presentation
- Cloud Services
- Software Engineering
- Automated ML

PORTFOLIO
- Domain
- Generic

Links & Resources

▶ Learning Resources :

❖ Udemy – Courses under $20 . Kirill Eremenko - https://www.udemy.com/course/machinelearning/

❖ Coursera – Pathway specializations with capstone projects

❖ Udacity – nanodegree . Job search and resume help. Mentoring available.

▶ Tableau for DataViz – free trial version, training.

▶ Projects and coding:

❖ Kaggle.com – datasets, starter scripts, kernels & discussions.

❖ Journey of Analytics – free tutorials and career advice

❖ Towards DataScience – Medium.com publication.

❖ ODSC – articles, code and conferences.

❖ DataScience Central, KDNuggets.

Common Qs

- Are data science bootcamps worth it to get a data science job?

- Data Science Portfolio Ideas

  - Beginner – Shiny, compare diff models, automated reporting

  - Intermediate – Sentiment analysis, Image classificaition

  - Expert – building apps, automate model deployement, deep learning.

- No prior experience, unable to find a job. Cold start problems?

- Interview Prep

  - Behavioral – what do you offer?

  - Tech – show, don't tell. Prepare for whiteboarding, coding and multiple formats.
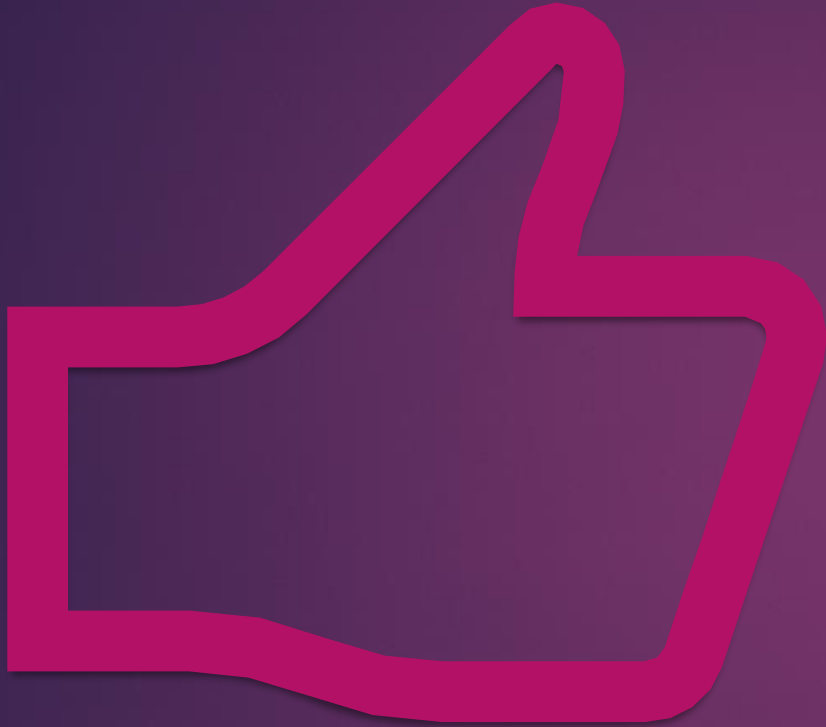
Connect for more Qs!

▶ @Anu_analytics [I tweet job postings using the tags #DataScience #Career]

▶ Personal - https://www.linkedin.com/in/anupamaprv/

▶ Delaware Tech Meetup - https://www.linkedin.com/groups/4181233/

▶ https://www.journeyofanalytics.com/

THANKS!