



Building a Career in Data Science

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Agenda

- ❖ Current State of Data Science
- ❖ Data Science Roles/Tasks
- ❖ Key Skills to build a career in Data Science
- ❖ Resources
- ❖ Take Aways

Current State of Data Science - World

❖ Educational Profile of Data Science Professionals

- ❖ 30% hold a Bachelor's degree
- ❖ 36% hold a Master's Degree
- ❖ 1 out of 5 hold a Ph.D.

❖ Data Science professionals span across multiple industries and is domain agnostic

❖ Data Science Tool Kit

- ❖ 75% use Python frequently or always
- ❖ Anaconda is the most commonly used platform, followed by R studio
- ❖ Open-Source tools most preferred among DS professionals

❖ Data Science – Future

- ❖ AI and AI powered applications (autonomous vehicles, smart vision systems, virtual customer assistants, smart (personal) agents and natural-language processing)
- ❖ DNN, NLP, IoT
- ❖ Separation of Data Storage and Computation, PaaS
- ❖ Automated ML

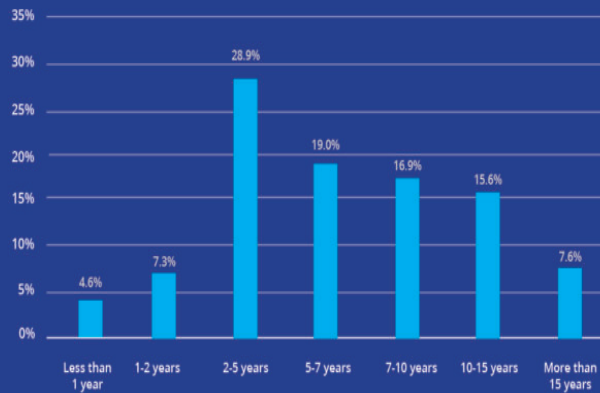
Current State of Data Science - India

- ❖ As of March 2020, the Analytics function in India **earned consolidated revenues of \$35.9 Bn** – a **19.5% growth** in revenue over last year.
- ❖ 16% of the Analytics revenues across all enterprises are attributed to **advanced analytics, predictive modeling, and data science**, up from 11% in 2018 – this highlights the growing maturity and progression of the Indian Data Science domain.
- ❖ Bangalore led the way for the largest share of revenues (city-wise) at 29.4%.
- ❖ BFSI sector contributed 35.6% of revenues – the maximum revenue contribution.

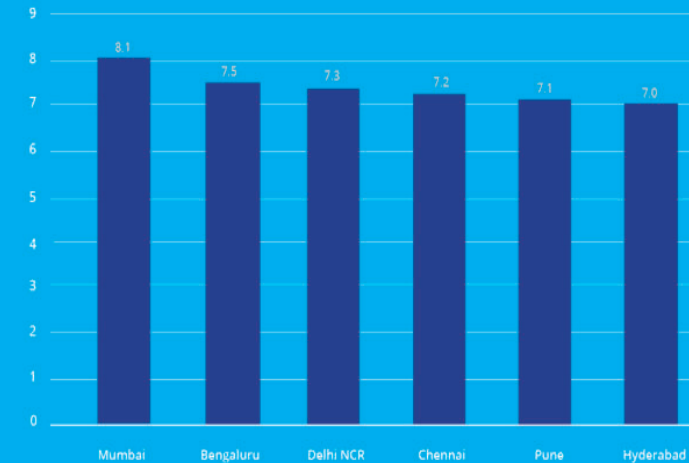
Current State of Data Science - India

❖ Demographics of Analytics professionals in India

Distribution by Experience Level

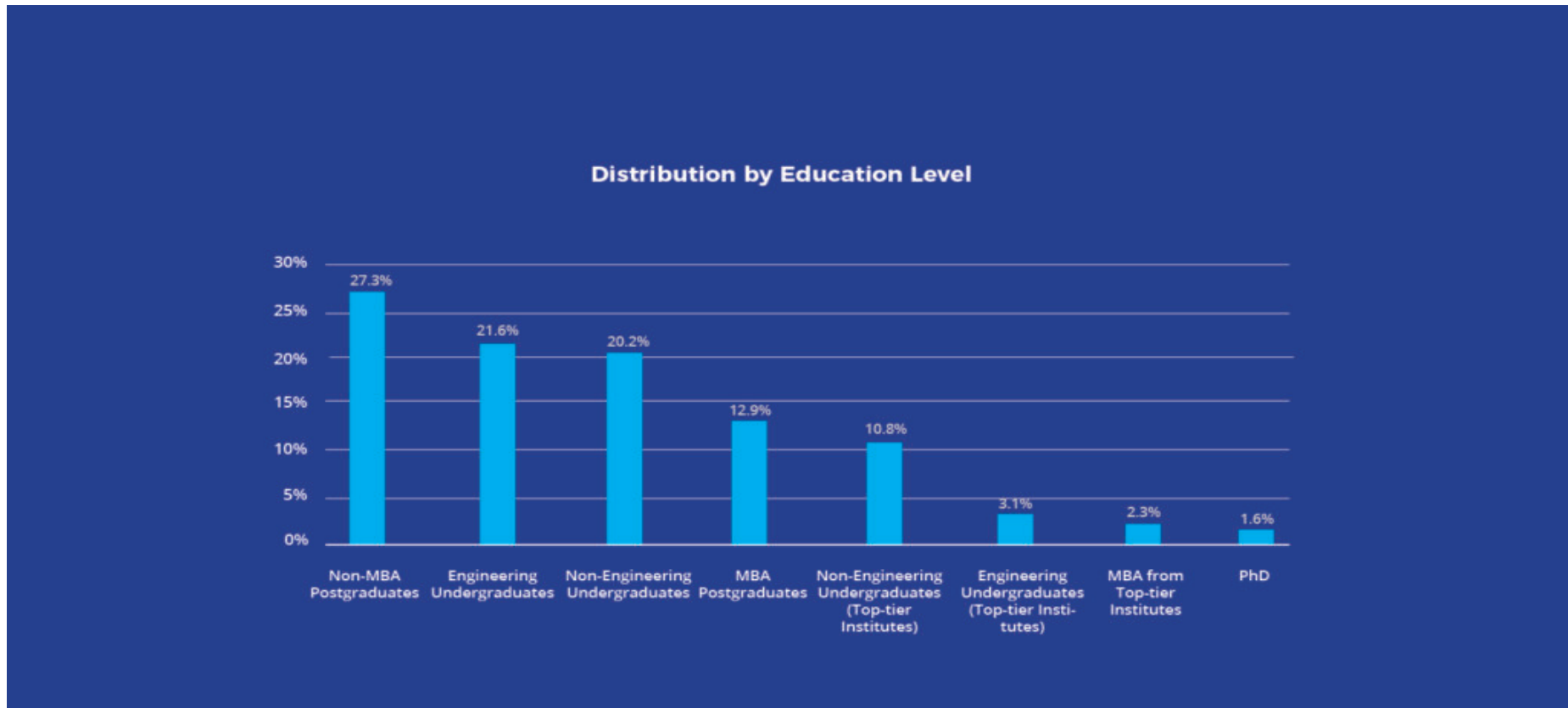


City-wise Median Experience (in years)



Current State of Data Science - India

❖ Demographics of Analytics professionals in India



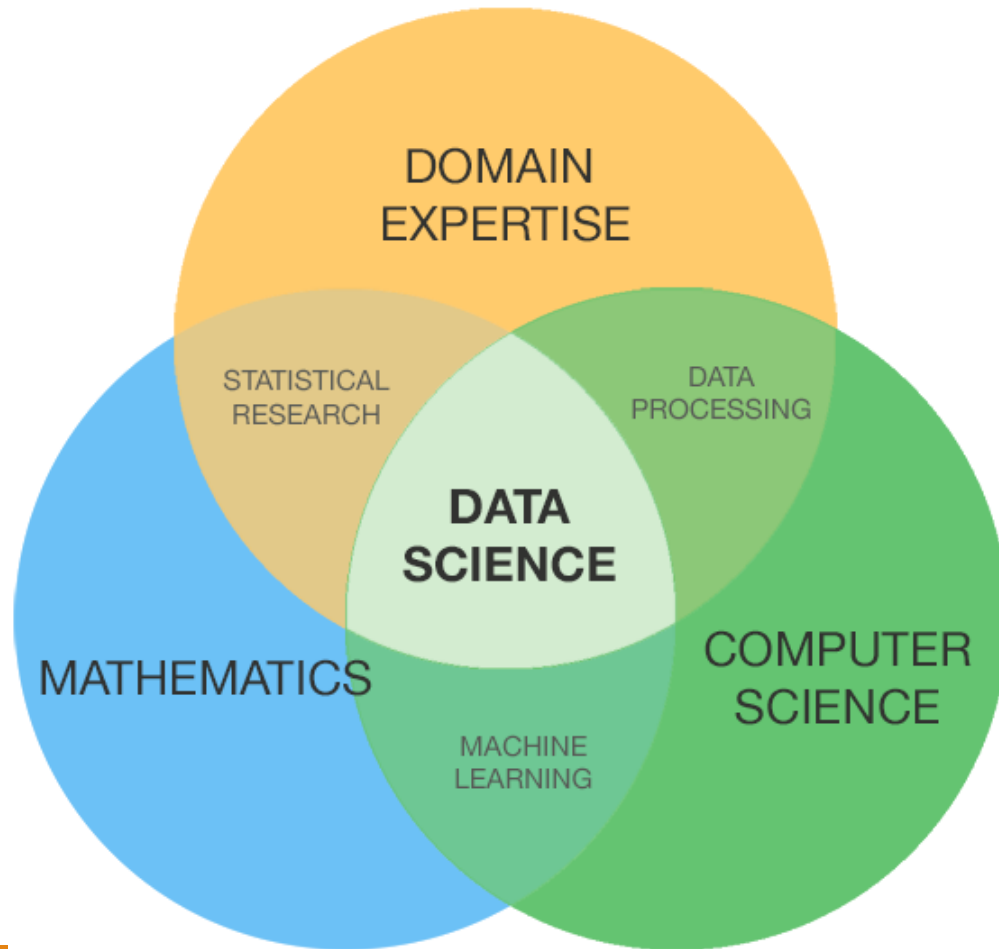
Current State of Data Science - India

❖ Demographics of DS professionals in India

❖ The participation of **women** in this space is at **27.8%**

❖ Median experience is of **5.8 years** compared to 7.4 years for the entire Analytics workforce in India.

Data Science Skills

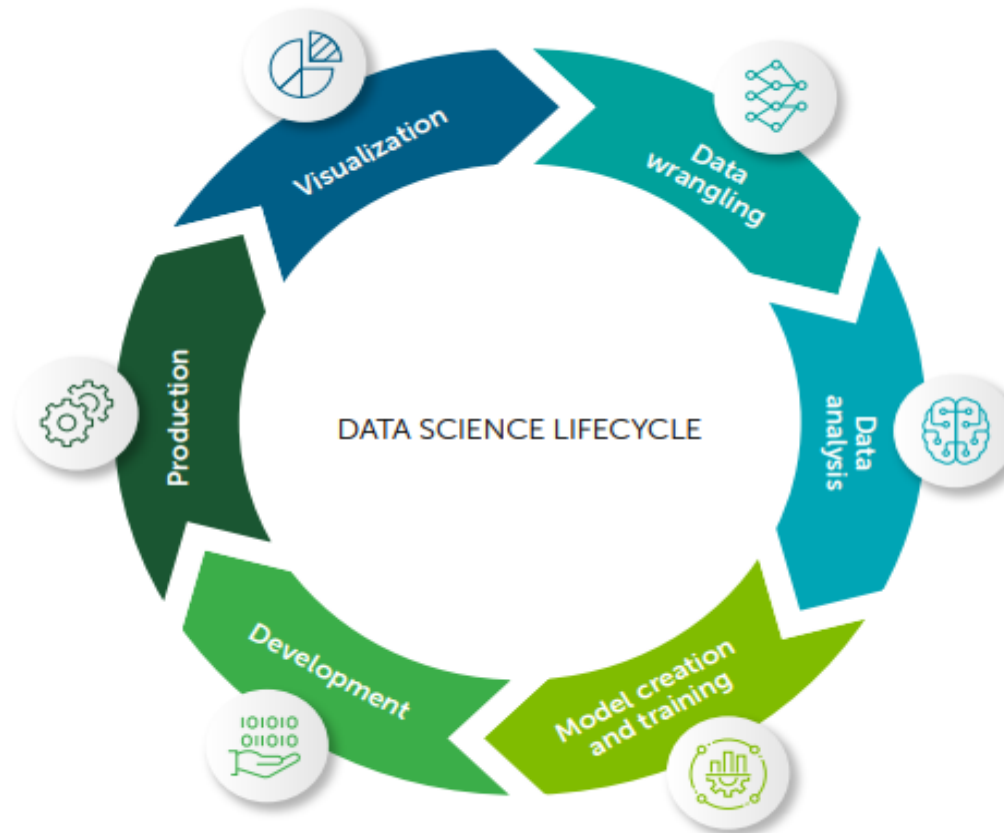


- ❖ Data Science is more about solving a problem and less about applying an algorithm
- ❖ Domain Knowledge is as important as Technical skills
- ❖ Experience & Practice goes a long way

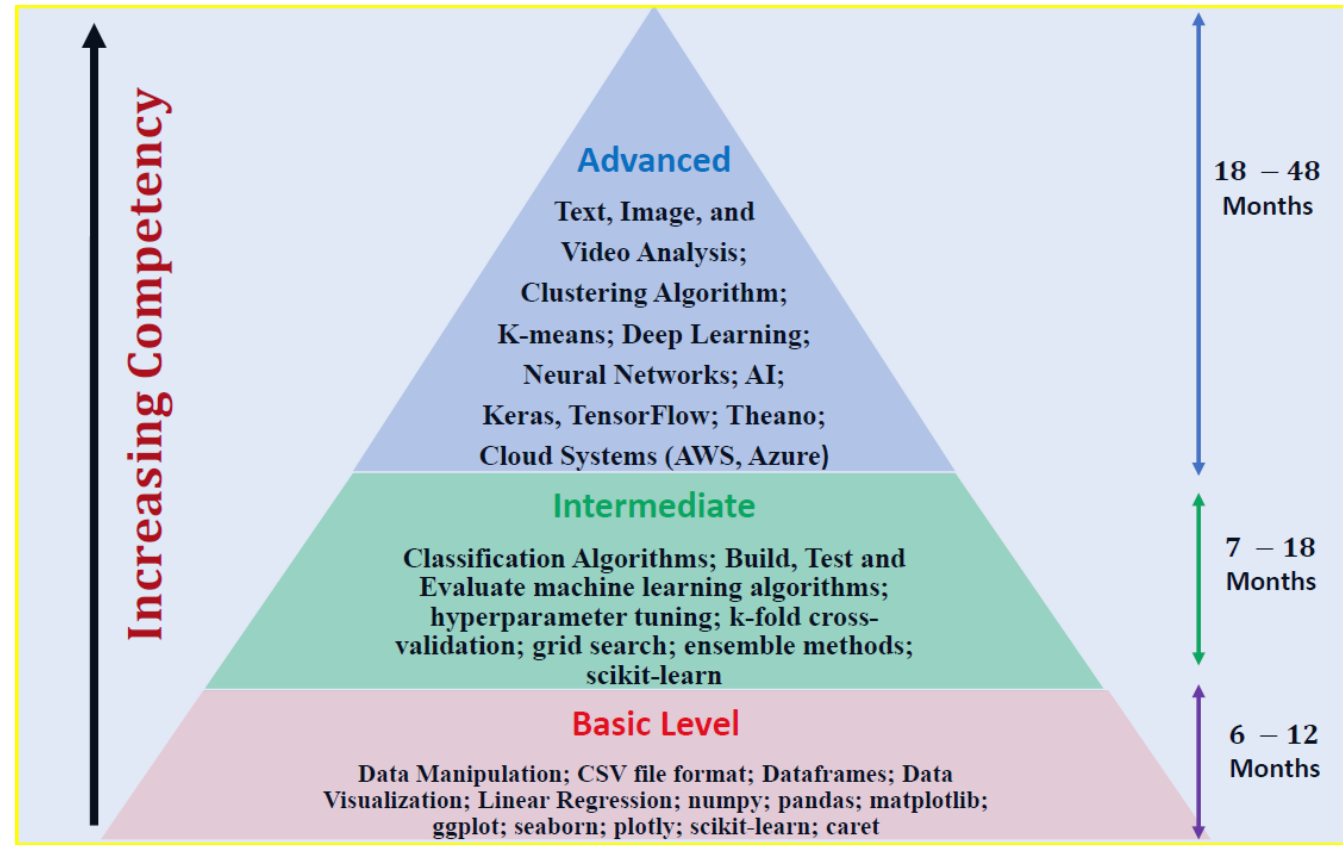
Data Science Roles/Tasks

A day in the life

Data scientists spend their time across a wide range of tasks that require a diverse skill set. Today's data scientist is a mathematician and a modeling expert who needs to understand everything that may impact their workflows. From data preparation, passing through visualization best practices and model training, and ending with DevOps knowledge to achieve proper deployment, a data scientist must have a good handle on all the components that may impact their analyses.



Key Skills to Build



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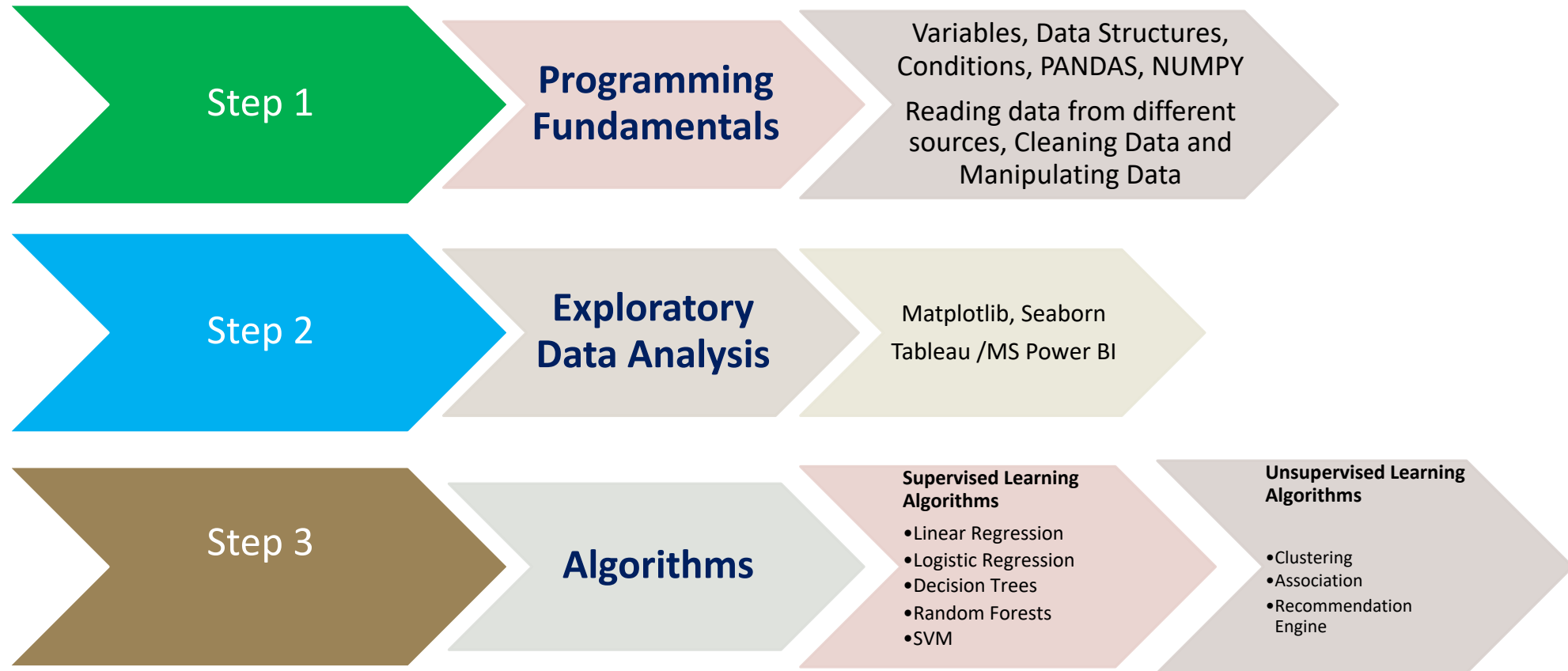
❖ Tools and Technologies

- Programming Languages
 - Python/R
- Visualization Tools
 - Tableau/Power BI
 - Matplotlib, Seaborn libraries
- Big Data Framework and Tools
- Cloud Technologies

❖ Technical Skills and Soft Skills

- Critical Thinking/Analytical Skills
- Business Context/Domain Knowledge
- Data Science Core Skills (Maths & Statistics)
- Communication Skills

Key Skills to Build- Roadmap



Resources

- ❖ Data camp
- ❖ Kaggle
- ❖ Coursera
- ❖ Business Analytics: The Science of Data - Driven Decision Making by Dinesh Kumar U
 - ❖ <https://www.amazon.in/Business-Analytics-Science-Driven-Decision/dp/8126568771>
- ❖ Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython by Wes McKinney
 - ❖ https://www.amazon.in/Python-Data-Analysis-Wrangling-IPython-ebook/dp/B075X4LT6K/ref=sr_1_1?dchild=1&keywords=Python+for+Data+Analysis%3A+Data+Wrangling+with+Pandas%2C+NumPy%2C+and+IPython+by+Wes+McKinney&qid=1594779341&s=digital-text&sr=1-1
- ❖ The Hundred-Page Machine Learning Book by Andriy Burkov
 - ❖ <https://www.amazon.in/Hundred-Page-Machine-Learning-Book-ebook/dp/B07MGCNKXB>

Take Aways – for Women

- ❖ Data Science Landscape is filled with opportunities – **regardless of Gender**
- ❖ The field is **interdisciplinary**, hence benefits from diversity in thinking
- ❖ The field values a **wide variety of skills** ranging from deep technical skills, to visualization and story telling.
- ❖ The challenges in building a career in Data Science are the **same**, for men or women
- ❖ Key step for getting more women into the field is encouraging **education in STEM**
- ❖ The next step is to **'Stay'** in the field, as you progress through life stages

Some thoughts for the future

- ❖ Research Areas
- ❖ Explainability of Models
- ❖ Bias and Ethics
- ❖ Data for Social Good

These are exciting times to be a Data Scientist!

A unique opportunity to address critical problems that impact society !