Roles and responsibilities in AI team:

* **Software Engineers**:

Many AI teams have software engineers in them.In order to execute the actions we need to write a software.

* **Machine learning Engineer:**

Responsible for building/ generating a software for A->B and other ML algorithms for product.

* **Machine Learning Researcher:**

They extend the state of art. Many hae ML researches responsible for state of art and few publish papers. Many companies focus on research instead of publishing.

* **Data Scientist:**

Examines the data and provide insights.Make presentations to team/executive to help business making decisions.

Today's data scientists also do work like machine learning engineers.

Meaning of this job title is still evolving today.

* **Data Engineers:**

Helps you organize data and makes sure that data is saved and secured, easily accessible.

* **AI Product Manager:**

Helps to decide what to build, what is feasible and valuable.

Steps to follow for a company to be good at AI:

* **Execute pilot projects to gain momentum:**

Important consideration for initial projects is to be successful rather than being valuable.

Can be in-house or outsource.

* **Provide broad AI training:**

Not only engineers, multiple people at multiple levels of company need to understand AI.

* **Develop on AI strategy:**

Design strategy aligned with virtuous cycle of AI.

Better Product - more users - more data - better product.

* **Develop internal and external communications:**

Investor relations - make sure investors can value company as an AI company.

Investor relations also include government relations. Eg: AI entering health care.

**AI pitfalls to avoid:**

* Don’t expect AI to solve everything instead be realistic about what AI can and cannot do with the given limitations of technical and data engineer resources.
* Don’t hire two or three ML engineers and solely depend on them to come with test cases instead pair engineer talent with business talent and work cross functional to find feasible and valuable projects.
* Don’t expect the AI project to work for the first time instead plan for AI development to be iterative process with multiple attempts to be succeed.
* Don’t expect traditional planning processes to apply without charges. Instead work with AI teams to establish timeline estimates.
* Don’t think you need superstar AI engineers before you can do anything instead keep building and get going with team.

Major applications of deep learning is :

* **Computer Vision:**

Image classification and object recognition : refer to taking input as picture and output telling what is in the pic.

* **Image segmentation:**

Draws precise boundaries around objects that it finds.

* **Text classification:**

Sentiment recognition, rating the comments.

* **Name entity recognition:**

Recognising names of people from data.

* **Machine translation:**
* **Robotics:**

Perception: figuring out what is in the world around you.

ML techniques:

* Unsupervised learning:

Learning does not give output data and provides data and lets the algorithm draw conclusions about data given

* Supervised learning:

Learns A->B mapping, we have to tell the algorithm what B to be suspected for given A.

* Transfer learning:

Lets you learn from task A and use the knowledge to help on task B.

* Reinforcement Learning:

Uses a “reward signal” to tell AI when it is doing well or poorly.

Knowledge graph:

Database that lists people and about them.