



# FiTecServ



Data Augmentation

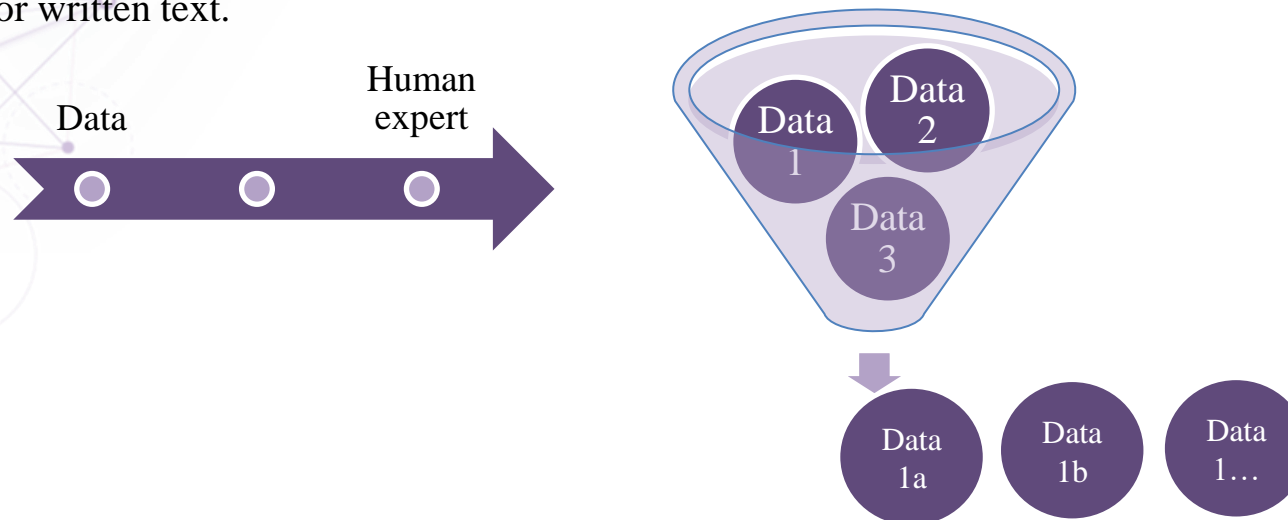
## Introduction to Data Augmentation

Data augmentation refers to those techniques that are used to increase the availability of data by making changes to the existing data and by making modified bodies of the existing data. This data is called newly created synthetic data from existing one.

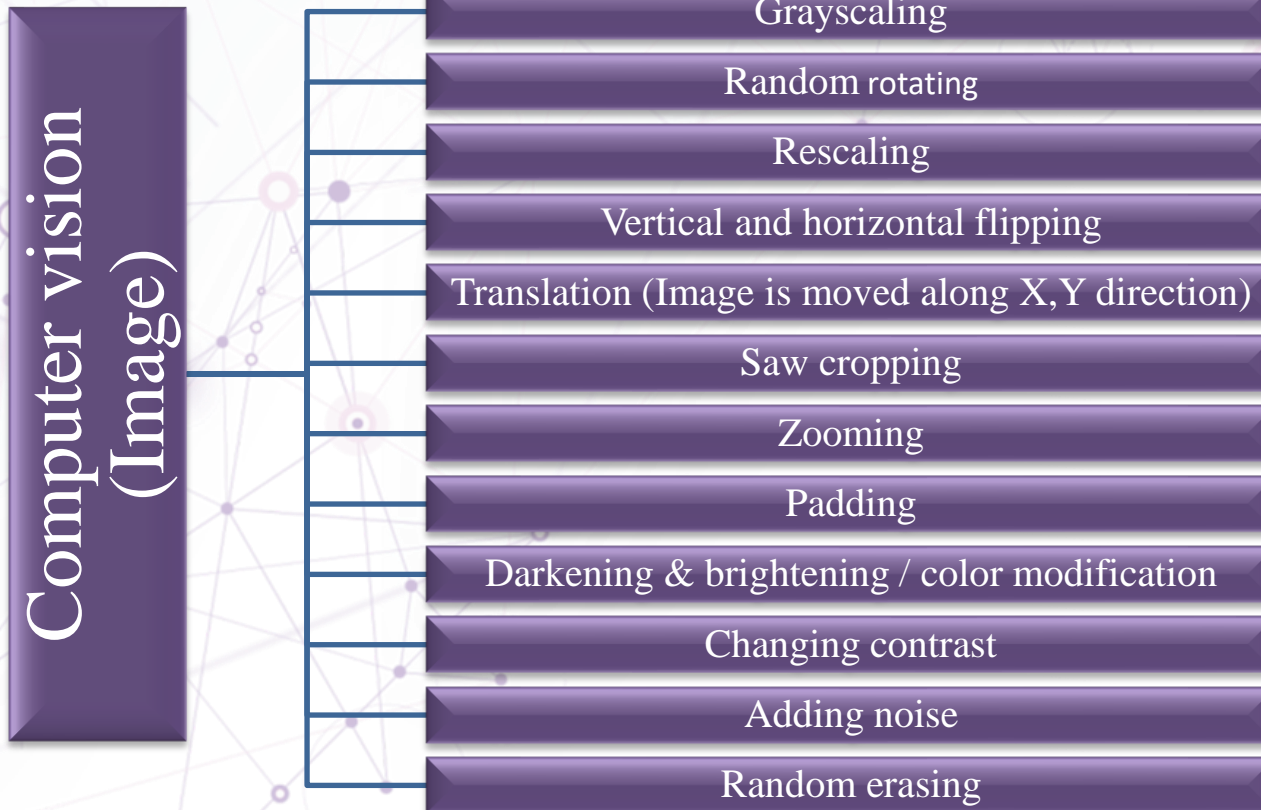
Data augmentation plays an important role in the process of training a machine learning model as it makes availability of data in diverse forms that improves data science & machine learning process, especially in situations of data scarcity.

Our data augmentation services amplify the data available in diverse forms for various models, without actually collecting new data. This technique helps save time and budget and plays a vital role in the machine learning models. Otherwise organizations have to spend a lot of budget in data collection in order to Quick start machine learning models.

Data augmentation is very useful for computer vision (images) and NLP situations being very beneficial for sound but also useful to be used for written text.



## Main techniques used



### Computer vision:

We use digital inputs like images, videos and Other visual inputs to gather meaningful information and then using this derived information to make recommendations which is helpful for business. So if artificial intelligence enables system to think, the vision enables them to see, observe and understand.

Augmenting consists en generate several images based on a previous one, changing different aspects like: colour; cropping or zooming.

## Main techniques used

### NLP (Sound)

Noise injection

Shifting time

Stretching speed

Changing pitch

Changing speed

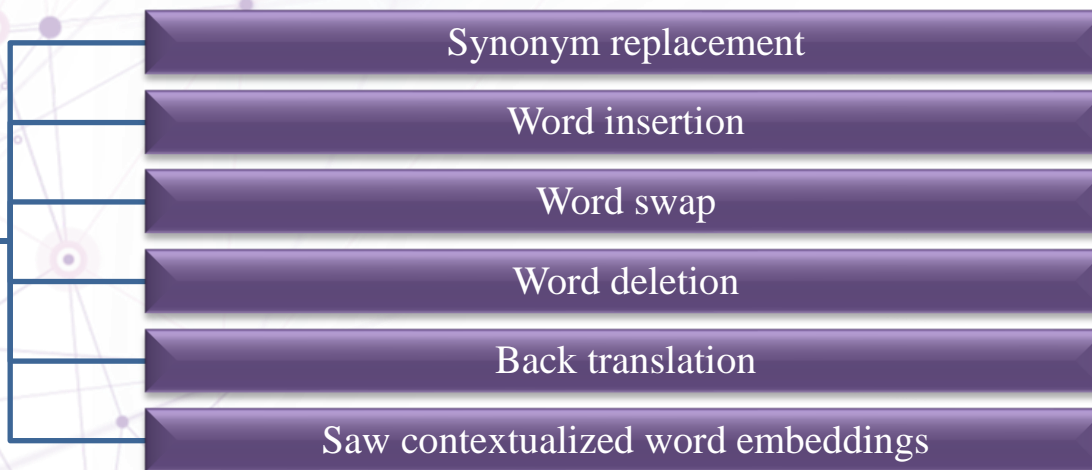
Augmenting consists in generate several sounds based on a previous one, changing different aspects like: adding noise; change speed or frequency.

### NLP (Natural Language Processing):

Under this technology we facilitate communication in between computers and human language. Basically it is a way in which computers are programmed to analyse and process enormous amount of natural language data. One best example of using this technology in business is OCR (Optical Character Recognition) in which lot of time can be saved to process the digital information to draw meaningful results and using this information derived to help take the right decision at the right time. Another examples are transcription and translation automation or voice synthetic, very useful to use in interaction centres (e.g. Customer contact centres)

## Main techniques used

### NLP (Text)

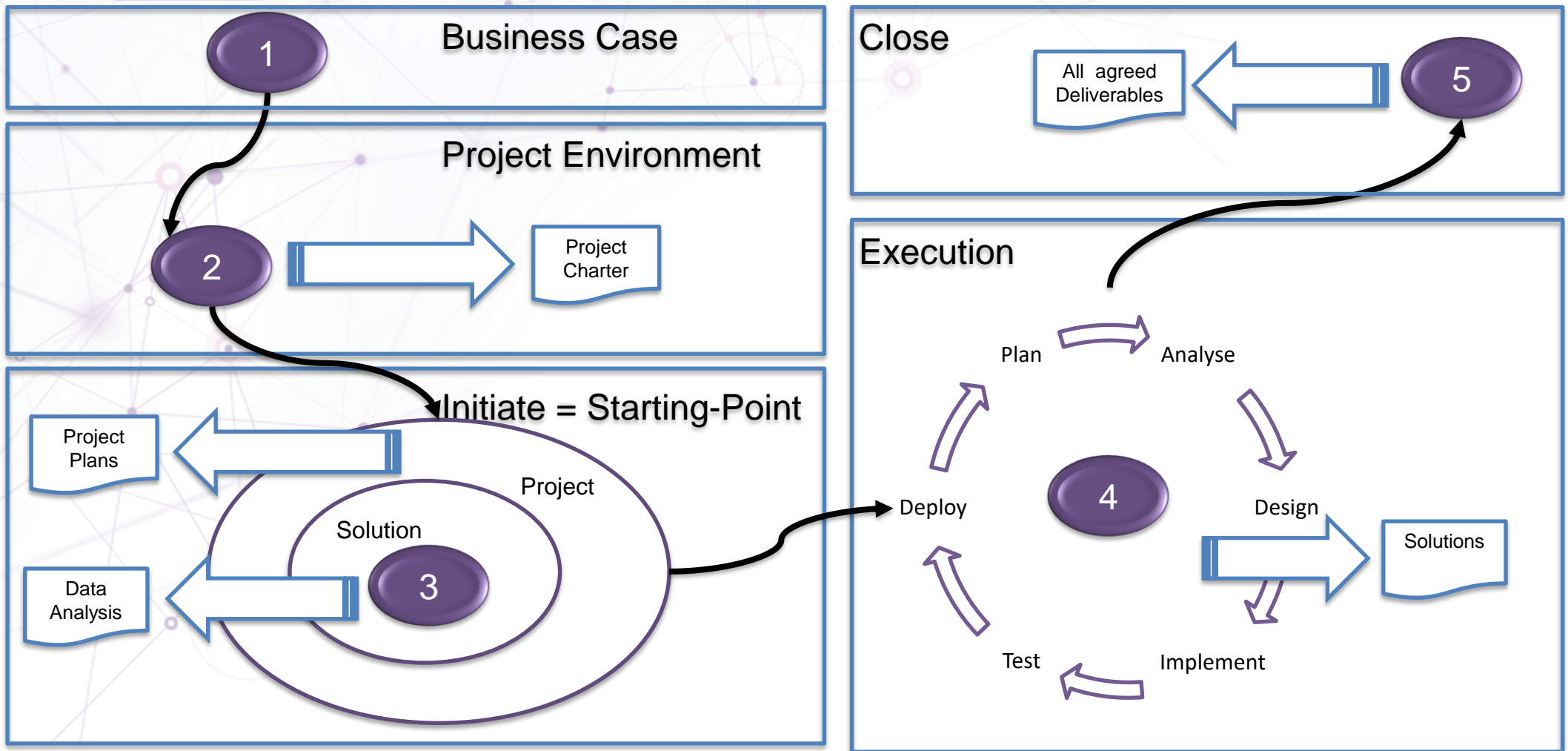


Augmenting consists in generate several texts based in a pre-existent one, changing different aspects like: insert or delete words; change word using a synonym.

### **NLP (Natural Language Processing):**

Under this technology we facilitate communication in between computers and human language. Basically it is a way in which computers are programmed to analyse and process enormous amount of natural language data. One best example of using this technology in business is OCR (Optical Character Recognition) in which lot of time can be saved to process the digital information to draw meaningful results and using this information derived to help take the right decision at the right time. Another examples are transcription and translation automation or voice synthetic, very useful to use in interaction centres (e.g. Customer contact centres)

## AitecServ Implementation Model (AIM)



## AIM – Business Case & Project Environment

### Business Case

Identify Stakeholders

Key: Identify Data Owners

Preparation/Identification of Business Case  
(Witch data is intend to augment?)

Project Vision

Witch Benefits area expected?

High Level Requirements

Identifying most important techniques

### Project Environment

Identify compliance and/or privacy needs  
(if images contain people or brands)

Identify data access requirements

Address Authorizations and accesses

Capture assumptions, constraints and  
prior agreements

## AIM – Starting Point

### Management

In this stage the main focus is to elaborate the several management plans. It is crucial to keep a detailed definition of the objectives, benefits and the main targets.

This kind of service is characterized by very small teams and a very low project management requirements.

### Solution

In this stage we evaluate the data availability and make a first exploratory and very descriptive data analyses to access mainly the quality of data and capture some basic insights that can guide us on the next stage.

### Management

*Identify Major Deliverables*

*Identify Risks*

*Initial preparation of project plans*

### Solution

*Evaluate data availability*

*Exploratory Data Analysis*



## AIM – Execution

### Management

*Monitor and control project objectives*

*Manage the various project plans*

*Manage Product and Sprint Backlog*

### Solution

*Implementation following AGILE principles*

*first release of a pilot with a “Go-No Go”*

*Incremental and interactive*

### Management:

The main task are to monitor and control the project objectives and performance, making the necessary adjustments to keep the project on track.

### Solution:

Our services follow preferentially an agile approach, providing in the first interaction a subset of data augmented for quality evaluation, address the expected objectives and to a cross-check of the techniques and tools used.



# Atecserv

Thank  
you!

For more information or to schedule a  
meeting please contact us on:



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