

Presentation on

Enabling the positive use of

Artificial Intelligence

for all

*On 'World Telecommunication and Information Society Day'
(17th May 2018)*

Presented by **PANKAJ KUMAR** - IT Practitioner , + 18 years Experience, M Tech-IT, B Tech and Diploma Computer SC. & Engg

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Today's Agenda

Let's Step into the fantastic world of the Artificial Intelligence



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Artificial Intelligence & its Applications

Artificial Intelligence (AI) is a branch of Science which deals with helping machines, find solutions to complex problems in a more human-like fashion.

Applications

* Natural Language Processing

* **Speech Recognition**

* **Pattern Recognition**

* **Hand Writing Recognition**

* **Facial Recognition**

* **Intelligent Agent**

* **Digital Assistant**

* **Artificial Creativity**

* **Robotics**

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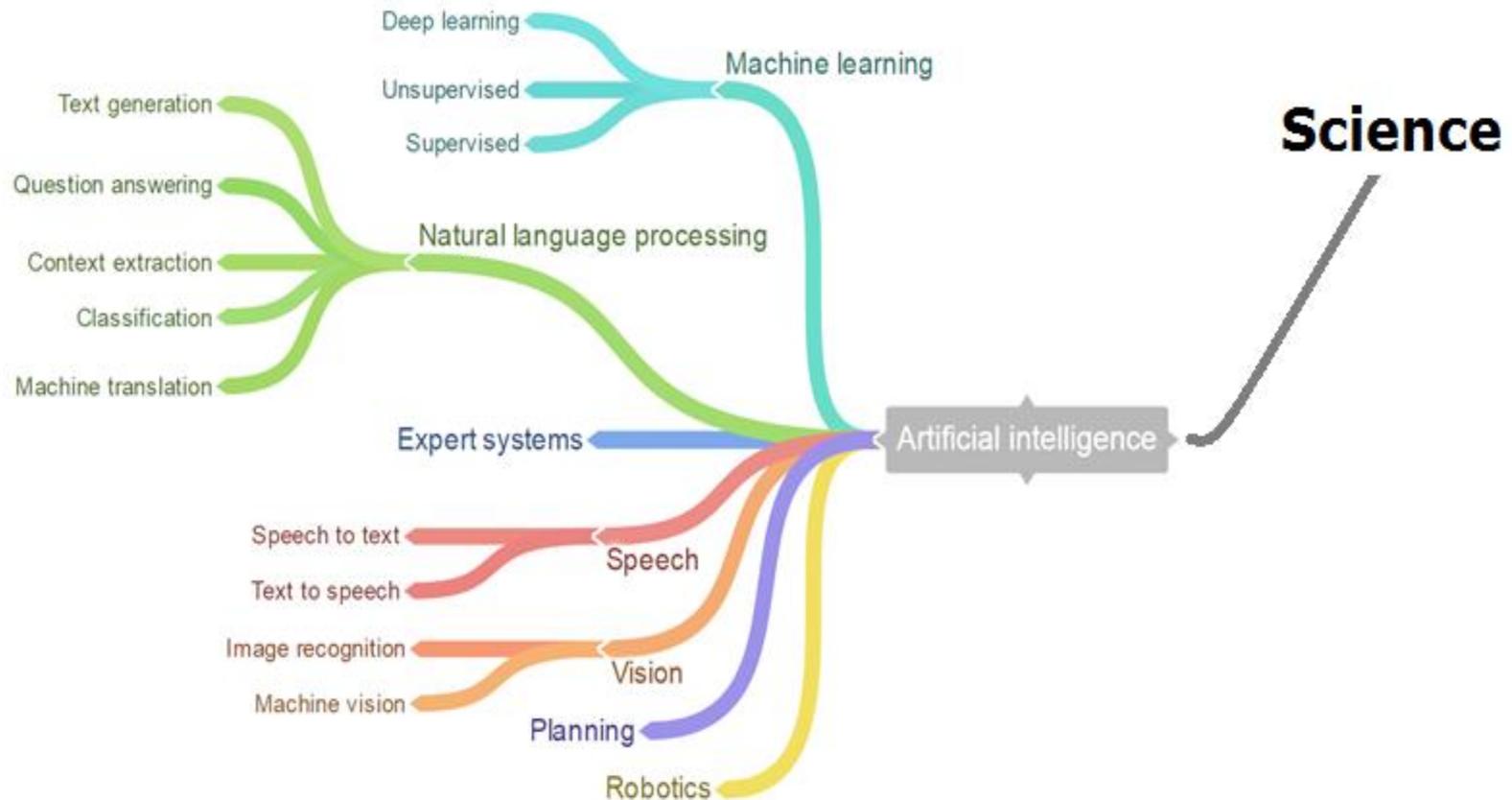
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AI Branches

We need an intelligent machines which has the power to think, analyze and make decision this is nothing but Artificial Intelligence



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AI Programming Languages

LISP is one of the most popular languages for creating AI. Its best features include garbage collection, uniform syntax, dynamic typing, and interactive environment. LISP code is written in s-expressions and consists of lists.

PROLOG is another widely popular AI programming language . The best thing about this language is a built-in unifier. Its main disadvantage is that this language is difficult to learn.

C/C++ is used for building simple AI in a short period of time.

Java is not as fast as C but its portability and built-in types make Java a choice of many developers.

And finally, there is Python. As developers state, Python is similar to Lisp.

Simple examples of AI

SPAM E Mail Filtering

Google Search

Youtube Video recommendation with perfect timing

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One Practical - Example

Logo **RECOGNITION**

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MYTHS

Some people will work on AI to hurt the people as always & win.

In future there will be less jobs for Doctors, Nurses, Accountant etc.

AI cant do all things but who know, in future AI may be just like us

* Machine can't have goals

* Robots are the main concern

* AI solves only specific problems

* AI can help us to destroys us and replace us * AI will not think before killing us.

AI is something that will do always harm. AI will do it quicker & do not get paid.
This is cheaper thing to do .

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Why we need to Enable the positive use of

Artificial Intelligence

for all



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Form The Holy Geeta

कर्मण्ये वाधिकारस्ते मां फलेषु कदाचन



"Karm karo, fal ki chinta mat karo"

Do your duty without thinking about results



For Artificial Intelligence



We Don't know what will be for people when we live with Artificial Intelligence. Its the duty of Engineers to Enable the Positive use of AI

**For AI When you can secure & control AI Machine Do it from 1st step
When you can secure & control AI Machine Do it from 1st step**

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How To Enable ?

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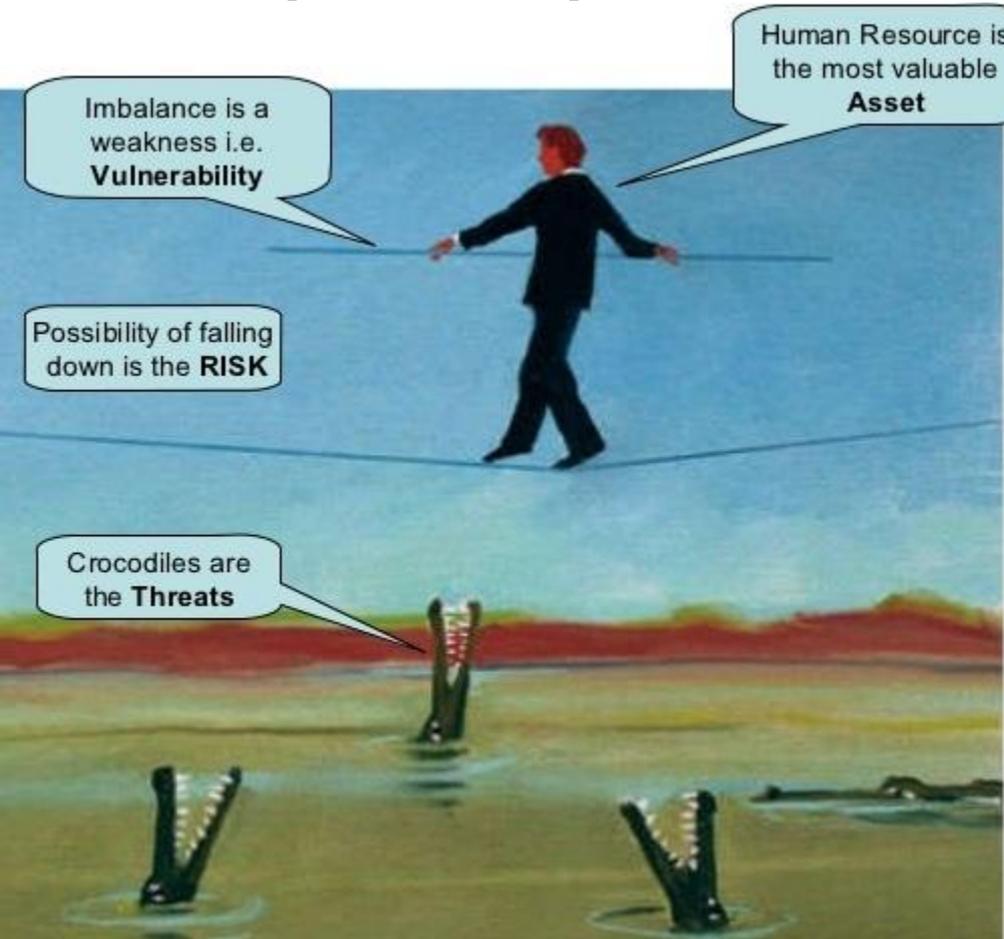
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Resources/ Assets/ Vulnerability/ RISK/ Threats

Simple Example



AI Machines Example

- * *AI Machine is Asset*
- * *Weak control/ security implementation is vulnerability*
- * *Improper Output from AI Device is RISK*
- * *AI Destroyer are the threat*

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What are IT Policies, Standard and Framework ?

Well-written policies should spell out who's responsible for security, what needs to be protected, and what is an acceptable level of risk

Ex: All email communication must be encrypted

Standards are much more specific than policies. standards are tactical documents because they lay out specific steps or processes required to meet a certain requirement enforced by policy. They are guidelines of how to go about implementing a policy

Ex: Use Encryption that is not yet proven to be breakable in less than 30 minutes.

Practices are procedures that implement the policy with desired standards. They give a step by step description of how to go about the implementation known as Framework..

Ex: Provide WiFi router with AES Encryption connected to a manageable switch

Policy are statement / Standard are specification / Practices are procedure or Framework. So we can use frameworks or standard documents to standardize the requirements.

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Frameworks

ITIL: Information Technology Infrastructure Library



COBIT: Control Objectives for IT



Agile : Scaled Agile Framework, Scrum framework



CMMi : Model framework



NIST Framework: A cyber Security Framework



Few other framework

ISF standard of good practice(SOGP), GAIT and GAISP ,COSO and turnbull guidance, SAS 70 , Joint EU Framework (ISO/IEC 27001:2005, ITIL and cobit) etc.

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Why standardization requires continual Improvement

When computers have just been invented or Internet has just been put into use, we cannot compare the way's to implement. Every innovator has used them in their own way by creating a positive impact. Present wave is AI. Every organization / inventor will use in their own way to make a positive impact with continual improving process and present standards and framework available to them.



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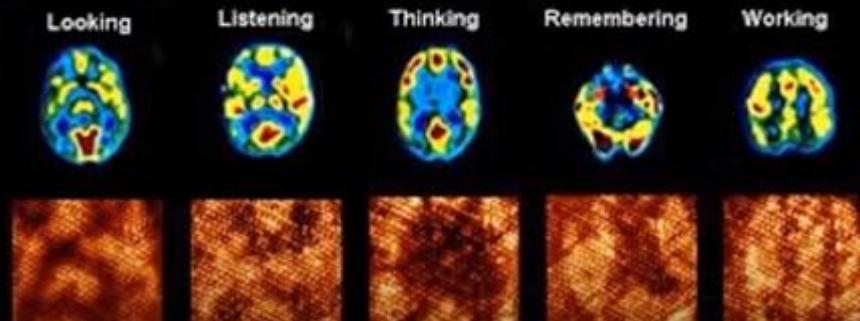
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HOW DOES HUMAN BRAIN THINK ?



NEURAL NETWORKS

Models Inspired by Human Brain to Carry out Various
Functions

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Internet Of Things

Block Chain Technology

Big Data

Cloud Computing

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What is IoT ?

Today's internet is made up for people to search the latest news, watch videos, Using social media and download music etc. The Internet of Things is different. Instead of people, IOT enables 'things' to access data and talk to one another.

In Simple words Devices with sensors that connect to one another and interact using the internet called IoT.

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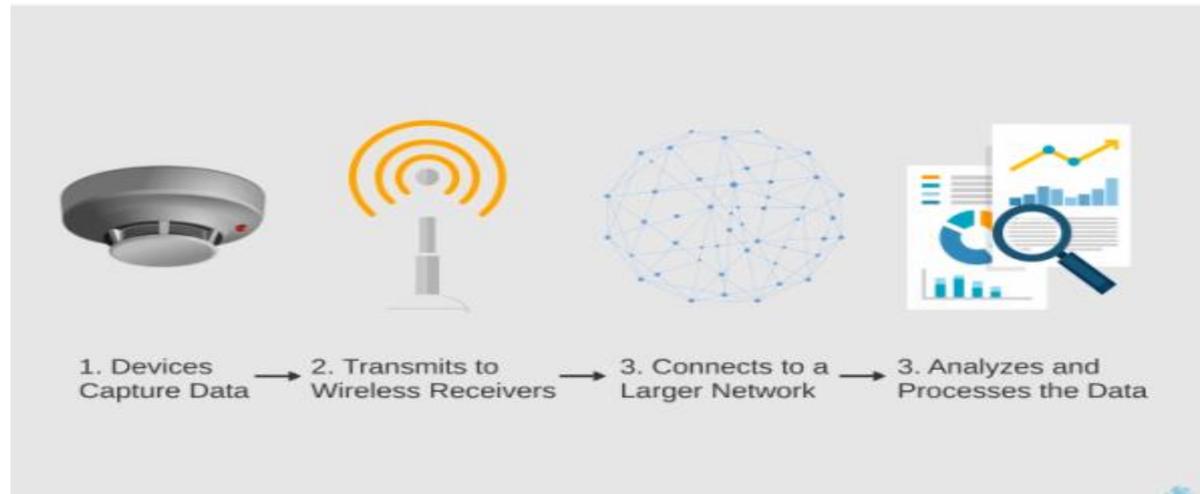
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Design Process- IOT



Assembly of the physical hardware:

This requires engineering skills, and is usually not completed by a developer. Most IoT devices use primarily pre-assembled boards and sensors connected on them.

Programming the device:

This requires programming skills to read the data from the sensors connected on the IoT device, and send them to the server.

Programming the server that will receive and store the data from the

device: This requires the use of server side languages, like PHP, ASP.NET or Node.js, and database queries based on MySQL or some other SQL derivative.

Displaying data to the device user:

This involves creating the web page or app that will depict the collected data to the user, which requires web development knowledge of PHP, JavaScript, HTML, CSS, MySQL, or another framework.

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Enable Positive use of AI by **Controlling & Securing**

My mind always goes to movie “Deewar” when Control and security is concerned in which Amitabh Bachchan & Sashi Kapoor played unforgettable Seen.

Vijay: Aaj mere paas paisa hai, bangla hai, gaadi hai, naukar hai, bank balance hai, aur tumhare paas kya hai?

Ravi: Mere paas maa hai!

VIDEO Link

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AI Engineer



***Mere Paas Antivirus Hai,
Firewall Hai, Security
system hai, Framework
Hai , Physical security
Hai, Robot hai, internet
hai, Cloud Computing hai,
IOT hai, IOT Operated
Robot hai***

Thumarre paas kya hai ?



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AI Destroyer Reply

Mere paas tera

Password

Hai Bahiya



***AI Machines, Robots, Bank Account,
Credit card all are welcome for
destroying of positive use.***

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Controlling and securing AI Machines

All Physical as well as logical areas should be secure

Machine physical location must be under control

*Sharing of resources on basis of “ **Need to know, Need to work, Need to share**”for all like Softwares, Hardwares, Passwords etc.*

Updated Antivirus Should be installed.

Firewall should be implemented..

Secure frameworks Should be used.

Software's must be updated.

Policies to be implemented.

Authorities Should also issue the license for practice in the field of AI.

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Why gun Require A License ?

APPLICATION FROM FOR BOOKING OF REVOLVER 32 MK III/ANMOL 32 (7.65mm) REVOLVER (LONG BARREL)

GOVERNMENT OF INDIA
MINISTRY OF DEFENCE
INDIAN ORDNANANCE FACTORIES
SMALL ARMS FACTORY
KALPI ROAD, KANPUR(U.P.)
PIN – 208009



Gram : SAFAC
Tel : **0512-2213332**
0512 – 2295042 TO 46
Ext. 5292 & 5688
Fax – 0512- 2296229

FOR OFFICIAL USE ONLY

Diary No.

Booking No:

Diary Date

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To,

The General Manager

Small Arms Factory

Kalpi Road, Kanpur – 208009

(All entries should be neatly written/ typed in CAPITAL letters.)

TERMS & CONDITIONS OF SALE

1. Orders will be accepted in prescribed form only. Which can be obtained from the factory or downloaded from Internet website www.ofb.gov.in or www.ofbIndia/gov.in. Online booking is also available on above website.
2. Orders from Indian Citizens having valid Arms License for NP Bore revolver issued by appropriate Civil Authority will only be registered. (Application form must accompany attested copy of Arms License).
3. An applicant can book one revolver at a time.
4. Payment of requisite amount against type of revolver will be required through online payment system as mentioned in above website with Application Form. **In case of cancellation of order on customer's request, Rs. 1000/- will be deducted as Service/Cancellation charge.**
5. Incomplete forms will summarily be rejected. General Manager, Small Arms Factory, reserves the right to refuse to book any order without assigning any reason what so ever without giving any notice.
6. Advice Note to the individual will be issued depending upon production/stock, strictly in sequence of serial No. of

9. Every effort will be made to effect supplies in sequence of the priority Number but no guarantee is given to this effect. No liability will be accepted for any change of Sequence of supply for any reason what so ever.
10. No claims of demand on any loss or damage due to delayed execution of order will be entertained.
11. No responsibility or liability will be accepted for postal delays.
12. Right is reserved to cancel any order without assigning any reason and without giving any prior notice. In this event, payments received against such orders will be refunded as due.
13. No liability is accepted for compensation/interest on advance or full payment received against the order Booked with the factory for any reason what so ever.
14. Notwithstanding what have here-in-force been stated, Ministry of Defence may allot weapons to Govt. department/Autonomous Bodies/individual at his discretion out of turn.
15. Revolvers once sold will not be taken back/exchanged for any reason whatsoever.

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Artificial Intelligence Learning Path using Python

Python is a simple and easy to learn speed up your programming quickly after getting the basic knowledge of Python and Machine Learning you should learn **Python libraries**.

Numpy – Numpy is mainly a container of generic data which contain an N-dimensional array object, random number capabilities, Tools for integrating C/C++ code, Fourier transform and other functions. It is useful for scientific computing.

Pandas – Pandas is a Python data analysis open source library, including structures such as data frames that provide users with easy-to-use data structures and analytic tools for Python.

Matplotlib – Matplotlib is another library you will like. It is 2D plotting library used to create publication quality figures. Matplotlib has a great advantage as it used in graphical user interface toolkits, web application servers, and Python scripts.

Scikit-learn – Scikit-learn is an open source machine learning algorithms used for data analysis and data mining tasks. It also beneficial for commercial use.

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Advanced Machine Learning Topics with Python

After learning with sci-kit-learn, you can move towards in depth with various common and useful algorithm. You can use **k-means** clustering one of the best machine learning algorithms. It is the simple method to solve unsupervised learning problem. Apart from that, you can learn other common and well-known machine learning algorithms such as investigated a powerful ensemble technique (**random forests**) and examined some additional machine learning support tasks (dimensionality reduction, model validation techniques).

If you want to learn more about AI then you have to take more attention on **deep machine learning frameworks such as Caffee and a Python library Theano.**

You can learn more about Python AI libraries such as **AIMA, pyDatalog, SimpleAI, EasyAi, etc.** There are also **Python libraries for machine learning: PyBrain, MDP, sci-kit, PyML.**

I can't say it's easy to work with AI using python but if you follow the above steps and learn more about Machine Learning Algorithms and libraries then you will get success definitely.

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LETS NOT **“THE END”** BUT

START WITH POSITIVE USE OF ARTIFICIAL INTELLIGENCE

Thank you

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