# ARTIFICIAL INTELLIGENCE Importance & Innovations



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#### **Apparent Issue**

- What is AI?
  - Programs that behave externally like humans?
  - Programs that operate internally as humans do?
  - Computational systems that behave intelligently?
  - Rational (Logical) behavior?

#### **Validation**

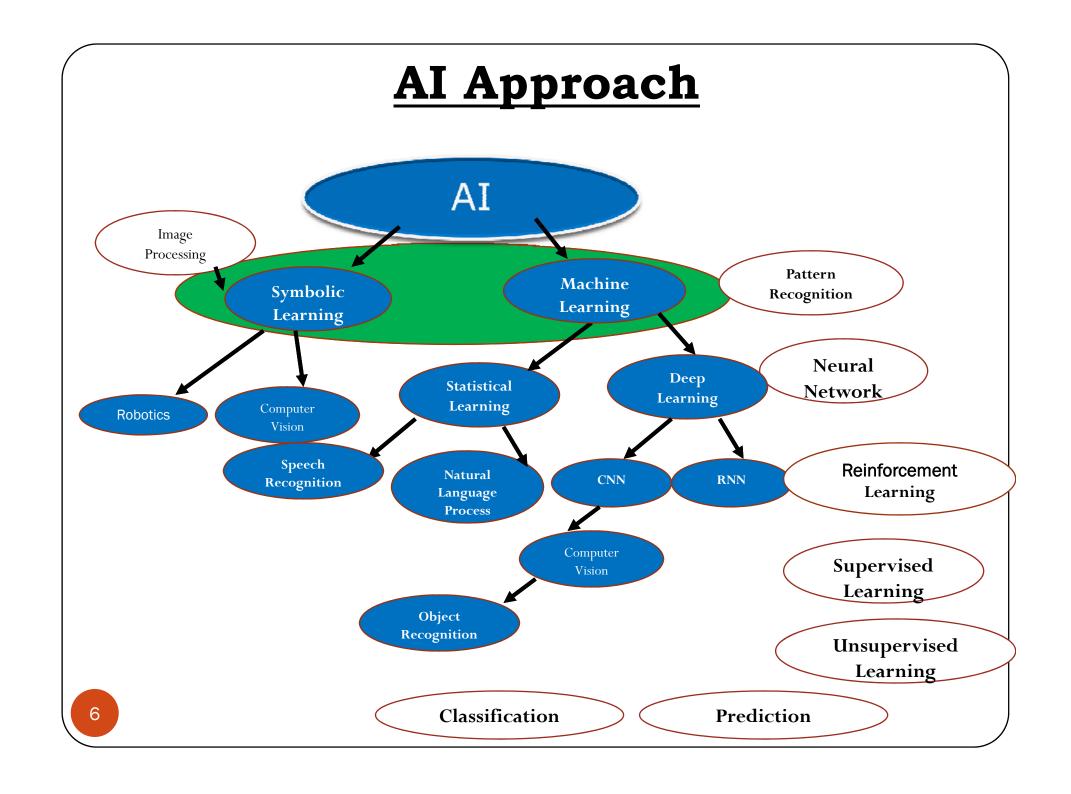
- Artificial Intelligence (AI) is a way of making a computer, a computer-controlled robot or a software think intelligently, in the similar manner the intelligent humans think.
- AI is accomplished how human brain thinks and how humans learn & decide and work while trying to solve a problem

#### Does AI have applications?

- Autonomous planning and scheduling of tasks
- Beating in a chess match
- Steering a driver-less car
- Understanding language
- Robotic assistants in surgery
- Monitoring trade in the stock market

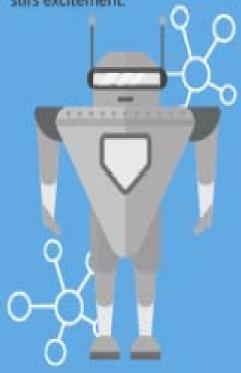
## **Knowledge - Based Systems**

- ➤ Knowledge is acquired by more learning approach.
- Learning is done in one of three ways:
  - Supervised learning
  - Unsupervised learning
  - Self-Supervised learning



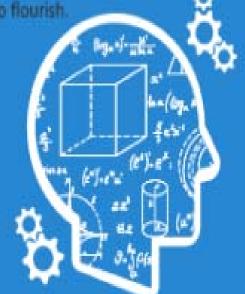
# ARTIFICIAL INTELLIGENCE

Early artificial intelligence stirs excitement.



#### MACHINE LEARNING

Machine learning begins to flourish.



#### DEEP LEARNING

Deep learning breakthroughs drive Al boom.





#### Natural Language Generation

- AI converts the data into a readable form allow the system to interact ideas with perfect accuracy.
- NLG is a sub discipline of AI that converts text into data and helps the systems to communicate ideas and thoughts as clearly as possible.



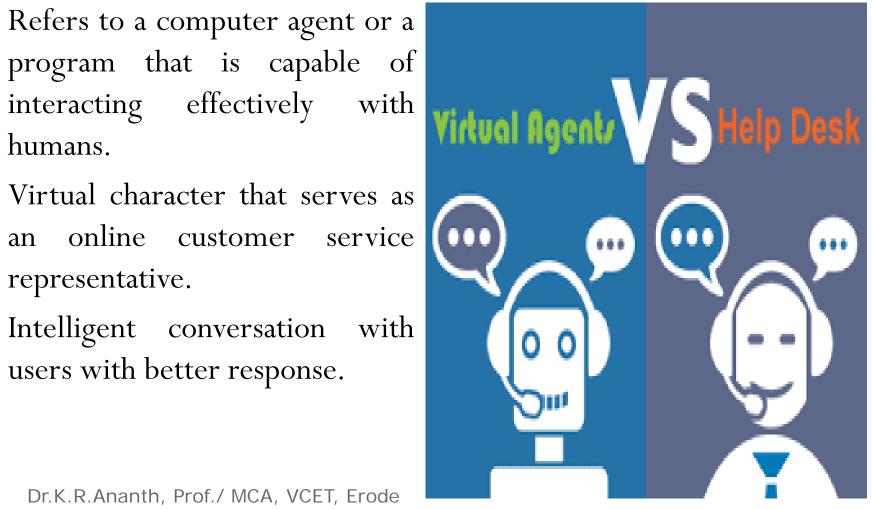
#### Speech Recognition

- Convert and Transform human speech into a useful and comprehensive format for computer applications to process.
- The transcription and transformation of human language into useful formats.



#### Virtual Agents

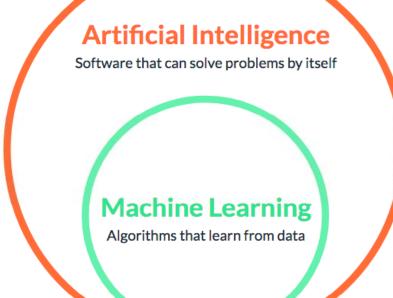
- Refers to a computer agent or a program that is capable of humans.
- Virtual character that serves as an online customer service representative.
- Intelligent conversation users with better response.



## Machine Learning Platform

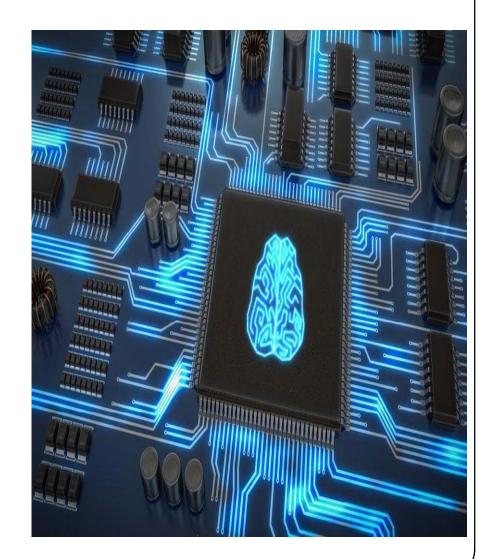
• Enabling computers to learn & become more intelligent.

• Help of algorithms, APIs, development, training tools, big data and applications, machine learning platforms are becoming more popular.



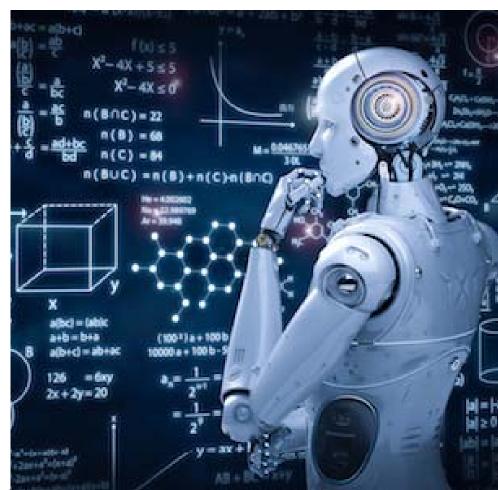
## AI Optimized Hardware

- Graphics and processing unit are designed and developed to perform AI tasks.
- An improved GPU, devices are being structured to execute AI tasks.
- AI optimized silicon chip which can be inserted into any portable device.



#### **Decision Management**

- Intelligent machines are designed to frame new rules and logic to AI systems for setting up.
- Prolonged maintenance and optimum tuning and make you run a profitable organization.

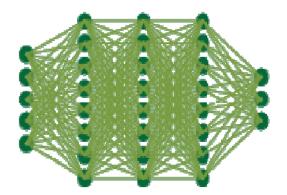


## Deep Learning Platform

- DL is a form of ML that duplicates the neural circuits of the human brain to process data and create patterns for decision making.
- In this unique technology, algorithms use artificial neural networks.

#### Deep Learning

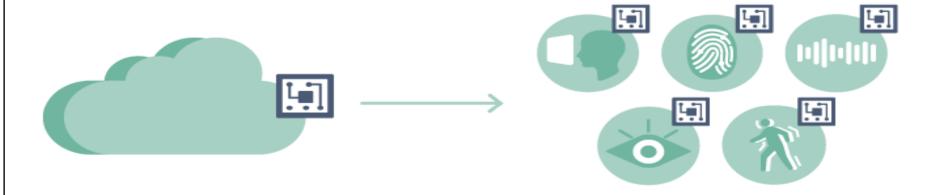
The learning of underlying features in data using deep neural networks.



#### **Biometrics**

- Recognition, measurement and analysis of the physical features of the body's structure, form and human behavior.
- It promotes organic interactions between machines and humans as it works with touch, image, speech and body language.

#### On-device AI enhances biometrics



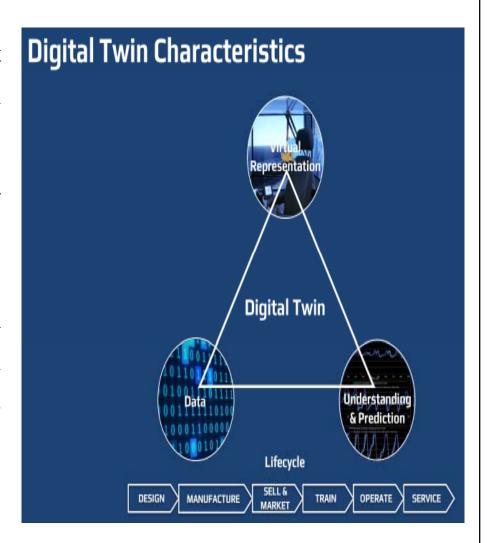
#### **Robotic Process Automation**

- RPA functioning of corporate processes due to the imitate human tasks and automate them.
- It uses scripts and imitate the human process and fed to a robot to effective.



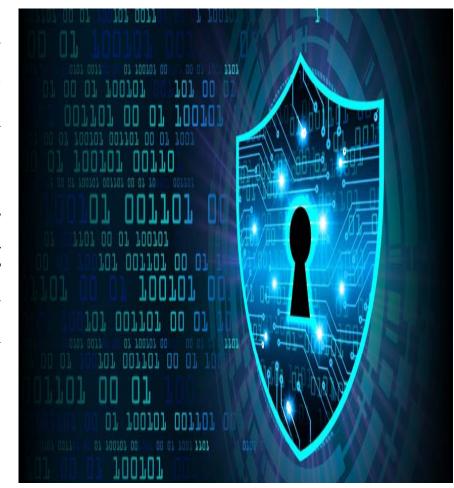
#### Digital Twin

- A digital twin is software that joins the space between physical systems and the digital world.
- Virtual representation of a physical product
- Data, in the form of user or AIgenerated input, is also needed as a catalyst to drive the Digital Twin, which in turn generates data that can be used for analysis.



#### Cyber Defense

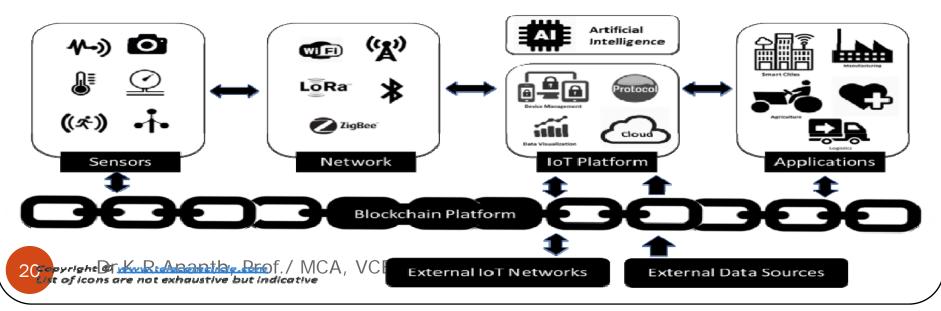
- Computer defense mechanism that detect, prevent and mitigate attacks and threats to data and infrastructure of systems.
- NN processing with ML techniques to create learning technologies in order to reveal suspicious user activity and detect cyber threats.



#### Peer to Peer Networks

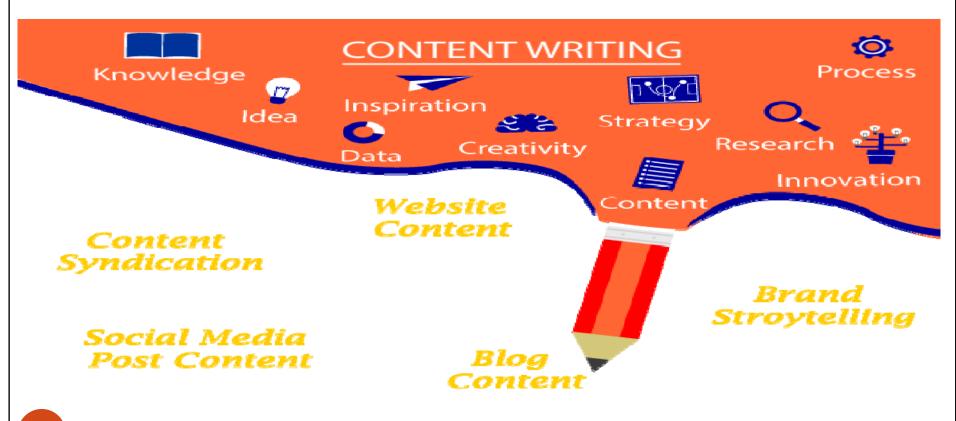
- Multiple systems are connected and share, it is also used in crypto currencies.
- Block chains, use a peer to peer network and everyone is allowed to join when someone joins this network.

#### IoT, Blockchain and Artificial Intelligence in Action



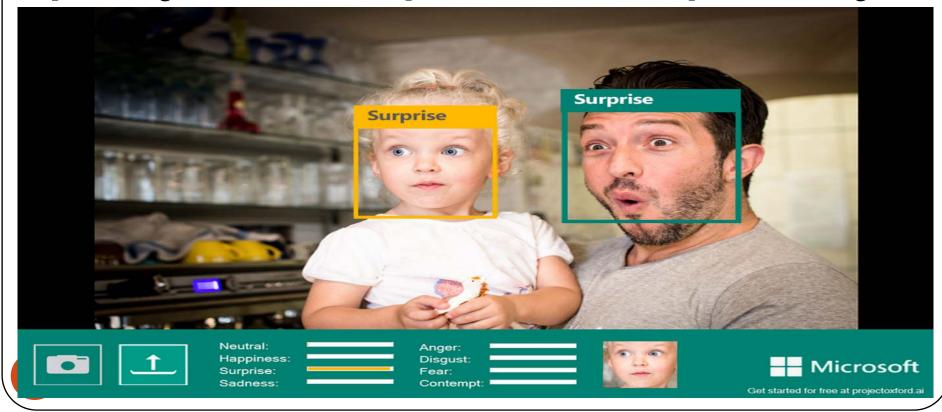
#### **Content Writing**

• AI helps in content writing such as articles, blogs, reports by suggesting possible words that suit well for sentences with spell correction and grammatically.



#### **Emotion Recognition**

- Enables emotions expressed by humans to be read and interpreted using advanced processing.
- Law enforcers often use thus technology during examination.
- Permits "scan" the sentiments on a human face using high-level processing. To catch "micro-expressions," that reveals a person's feelings.



#### **Marketing Automation**

- Enables companies to increase engagement and improve performance to grow income faster
- Marketing and sales teams and divisions have adopted AI and benefited a lot from it in return



# Importance of Artificial Intelligence



## **B2B** marketing platform

- Marketing, Operations, Sales and Analytics professionals, this platform offers up-to-date data and intelligence
- Create successful strategies, operate efficiently, drive revenue growth
- Provide businesses with actionable insights and a competitive advantage

## Geo-targeted pricing service

- A new pricing solution enables e-commerce businesses to personalize prices and promotions based on a customer's location.
- ML & AI optimise the sales of e-commerce retailers.
- Certain application uses artificial neural networks to provide a realtime model of the varied prices in different locations.



# Predictive advertising identifies target audience

- An advertising solution uses machine learning to predict customer behavior and improve advertising campaigns.
- Predictive solutions are changing the ways businesses operate
- Programmai is a ML solution for brands and retailers to use for advertising. Using AI, the tool can create predictive advertising GEOGRAPHIC CRITERIA CAMPAIGNS.

  BROWSING JOURNEY



#### Assistant to detect on Medical care

• By certain applications the medical helps personnel make critical decisions in the heat of the moment on calls to emergency services.

• All the data provided during the emergency call is automatically analyzed by a specialized algorithm to maintain those data in edge

computing approach.

• Example application Corti.



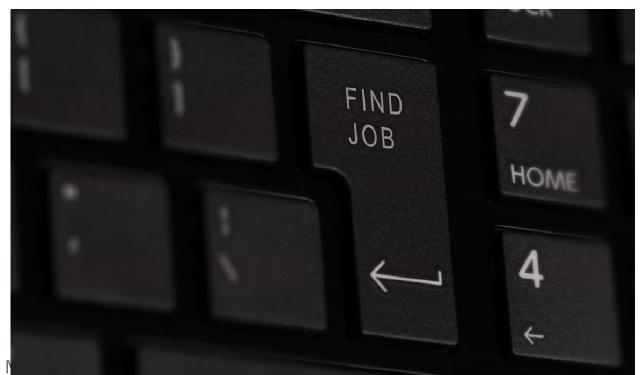
#### Sports video intelligence platform

- A new technology powered by deep learning offers coaches actionable insights by tracking every aspect of soccer and cricket games from videos.
- The effect of innovation on the sporting world.
- Example application Flixsense



#### AI recruiter does all the tedious tasks

- Recruitment chatbot helps each candidate by simulate a conversation .
- Time-consuming and Stressful.
- Example application Mya



# Predicts Prices of Product based on freshness

- System uses deep learning algorithms and real-time data to price produce and reduce food waste.
- Solutions that tackle the issue of food waste, such as grocery stores introducing new pricing systems to ensure products close to expiring will sell.
- Example application RapidMathematix

• IoT devices are also integrated

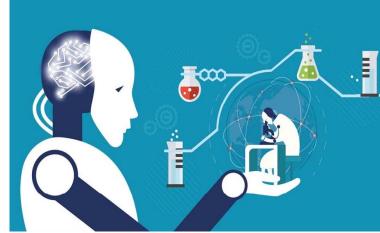


#### **Common Indian Important Applications**

• Haptik.ai

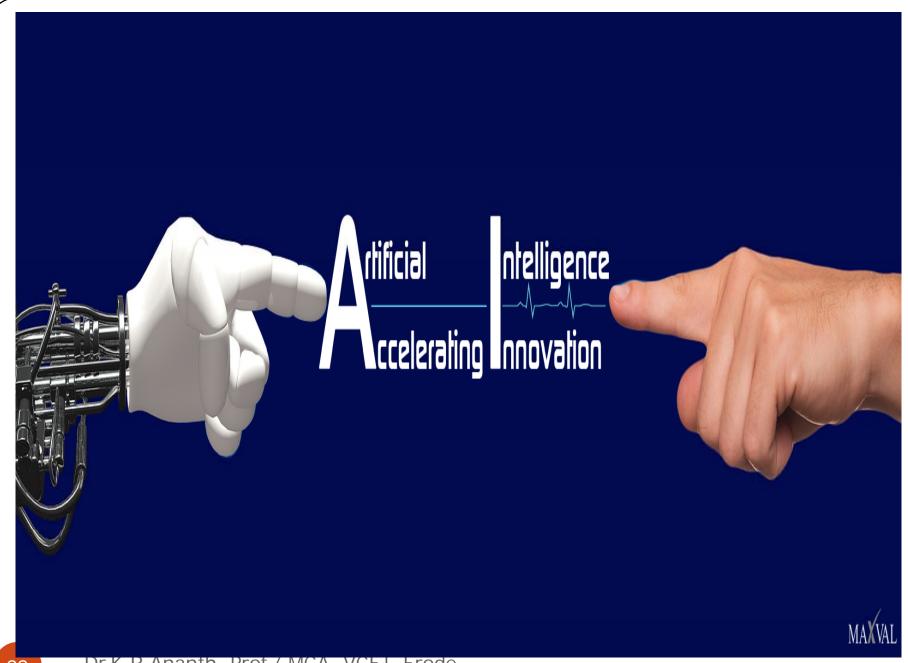
haptik

Discovery AI



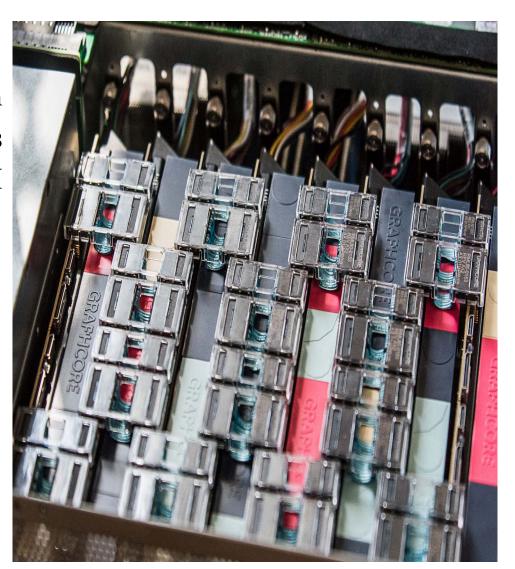
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#### Intelligent Processing Unit AI chip

- Application GRAPHCORE
- Enabling the next generation of AI applications with its Intelligent Processing Unit AI chip
- Intense algorithms at existing CPUs and GPUs.



# Perceptive Customer Intention via Messaging apps

- Application LIVEPERSON
- AI being able to replace a friendly and knowledgeable customer-service representative
- Service routes incoming queries to the best agent, learning



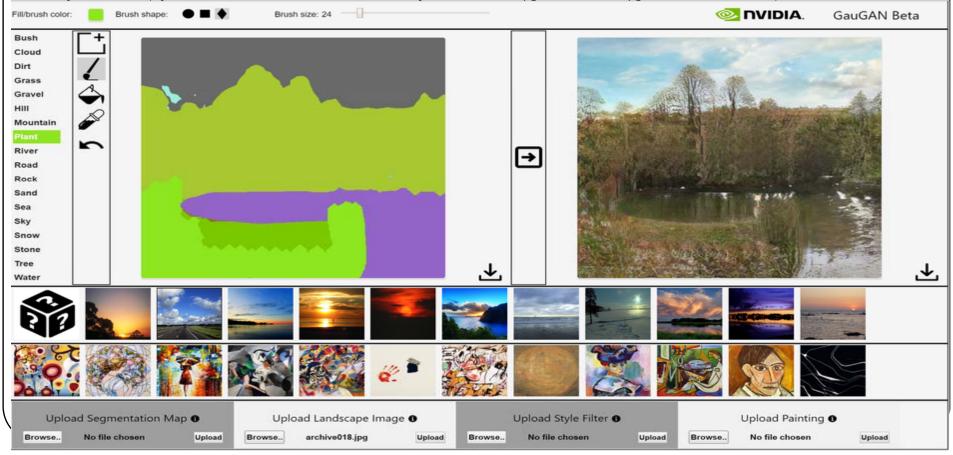
#### Categorizing care after a patient's stroke

- Application –VIZ.AI
- When a stroke victim arrives AI analyzes the patient's CT scan, then organizes all the clinicians and facilities needed to provide treatment
- Workflows that happen simultaneously, instead of one at a time.



### Renovate Sketches into Finite Images

- Application GauGAN
- deep-learning model that acts like an AI paintbrushWorkflows that happen simultaneously, instead of one at a time.
- prototype ideas and make rapid changes to digital scenery





# Big technologies related to AI

- Blockchain
- Blockchain As A Service
- AI-Led Automation
- Machine Learning
- Enterprise Content Management
- AI For The Back Office
- Quantum Computing AI Applications
- Mainstreamed IoT

# **AI Trendy**

- AI on healthcare more accurate and less costly
- Attention on paid service on ability and trust
- AI less data-hungry
- Accuracy and efficiency of NN
- Automated AI development
- AI in manufacturing

# CG will greatly promote from AI

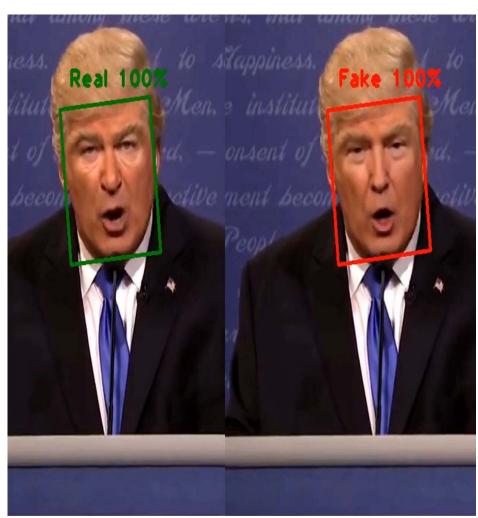
- True for more photo realistic effects like creating high fidelity environments, vehicles, and characters in films and games.
- Recreating on screen a realistic copy of metal, the dull gloss of wood.



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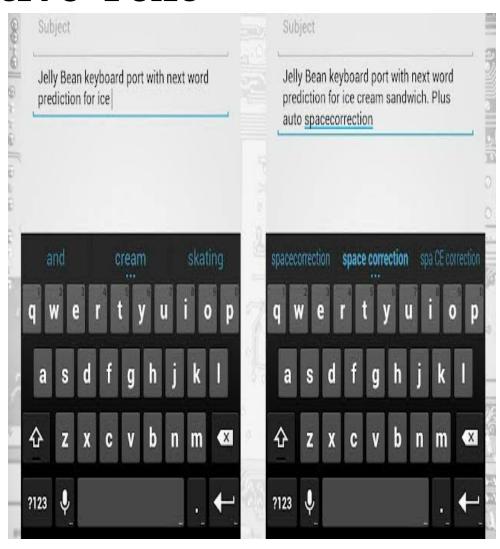
### Deep fakes on better

- Deep learning and "fake are synthetic media
- Generated over visual and audio content with a high potential to deceive.
- Involves training generative neural network architectures



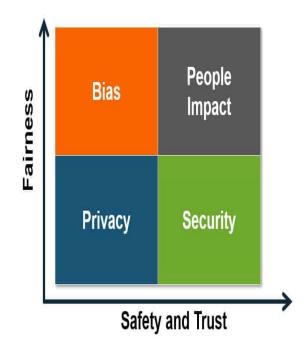
### **Predictive Text**

- Smart email systems on AI to predict what will type next can make it quicker to write messages to our friends, colleagues and family.
- . Predictive text algorithms, which use what we have typed in the past to suggest the next words in a sentence as we write, already feature on most smart phones



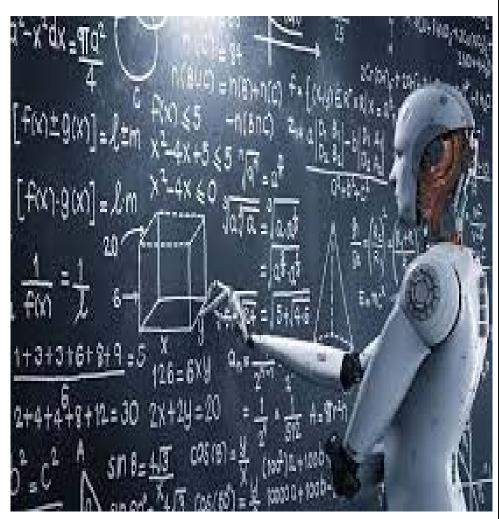
### **Ethical Framework**

- Sophisticated, developers will A Framework For Ethics of Data and Al be under more pressure to keep an eye on the ethics of their work
- Development and use of AI could define how the human designers



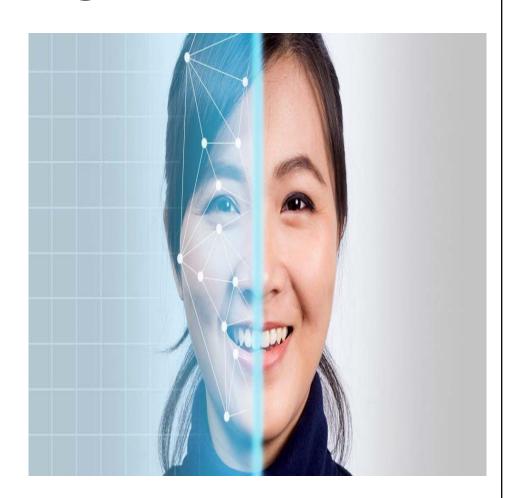
# . Quantum Computing

- An interdisciplinary field that focuses on building **quantum** algorithms for improving computational tasks within AI.
- Hold out the hope of dramatically improving the speed and efficiency of how we generate, store, and analyze enormous amounts of data



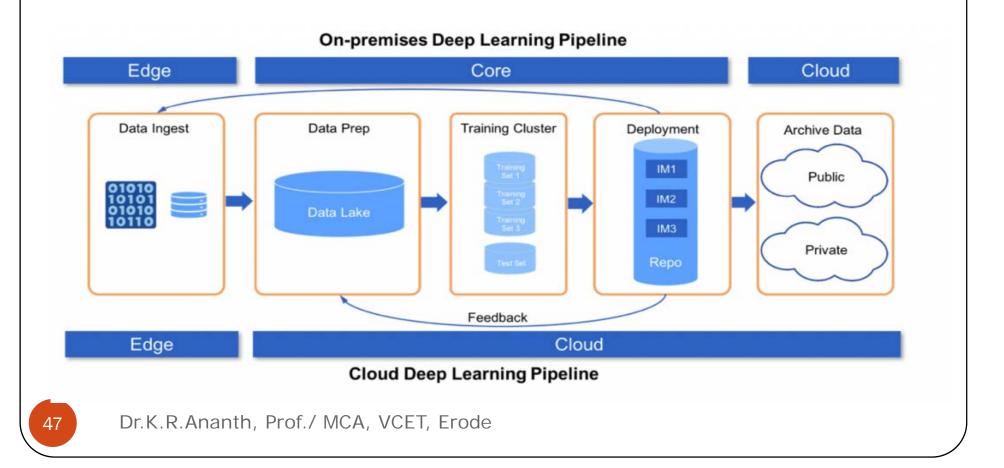
### **Facial Recognition**

- Appears to be *fashion* at the moment on computational tasks within AI.
- Detect individual people by analyzing their walk and heartbeat



### **Optimization of Production Pipelines**

- Fully autonomous production lines powered by AI
- AI and ML are being used to optimize production promises to reduce costs, improve quality, and reduce energy consumption



### Benefits of A.I.

The most important purpose of A.I. is to reduce human casualties in

- → Wars
- → Dangerous Workspaces
- → Car Accidents
- → Natural Disasters

Or to just make everyday life easier by helping with tasks such as:

- → Cleaning
- → Shopping
- → Transportation



# The Future of A.I.

- ★ Military Bots
- ★ The perfect lawyer
- ★ Music
- ★ Business
- ★ Healthcare



### TOP Trending Research in AI



- The new NLP paradigm is "pretraining + finetuning".
- Linguistics and knowledge are likely to advance the performance of NLP models
- Neural machine translation is demonstrating visible progress.
- Emotion recognition for open-domain chatbots.
- So on....

