

Artificial Intelligence

Art of possible on AWS

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AI is the new Electricity – Why so?

Neural networks date back decades. Why resurgence now?

Big Data

- Larger Data sets
- Easy to collect
- Store and process



Hardware

- Faster processors
- GPUs
- Massively parallel algorithms



Software

Improved techniques
Better Models
More tools
Frameworks



- ✓ Cloud computing platforms like AWS have democratized access to IT
- ✓ AWS mission is to democratize AI




Our mission at AWS

Put machine learning in the
hands of every developer

THE AWS ML STACK

Broadest and deepest set of capabilities

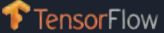











AI Services

VISION			SPEECH		LANGUAGE		CHATBOTS	FORECASTING	RECOMMENDATIONS
 REKOGNITION IMAGE	 REKOGNITION VIDEO	 TEXTRACT	 POLLY	 TRANSCRIBE	 TRANSLATE	 COMPREHEND	 LEX	 FORECAST	 PERSONALIZE

ML Services

 Amazon SageMaker	Ground Truth	Notebooks	Algorithms + Marketplace	Reinforcement Learning	Training	Optimization	Deployment	Hosting
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ML Frameworks + Infrastructure

FRAMEWORKS	INTERFACES	INFRASTRUCTURE						
 TensorFlow  mxnet  PYTORCH	 GLUON  Keras	 EC2 P3 & P3DN	 EC2 G4	 EC2 C5	 FPGAS	 GREENGRASS	 ELASTIC INFERENCE	 INFERENTIA

WHY AWS FOR ML?

- Broadest and Deepest set of AI and Machine Learning services
expert practioners, data scientists and developers
- Support for multiple frameworks instead of just focusing on one
TensforFlow, Keras, PyTorch, MxNet
- Accelerate your adoption of machine Learning using SageMaker
Model time from 6 months to week
- Optimized for machine learning
10x better performance on algorithms and 2x performance increase using SageMaker Neo
- Reduce Cost
70% cost reduction for data labeling – Ground Truth and 75% cost reduction on inference using Elastic Inference.
- Hence, more machine learning happens on AWS than anywhere else!

More machine learning happens on AWS than anywhere else

10,000+ customers | 2x the customer references | 85% of TensorFlow projects in the cloud is on AWS



Public Sector customers using AWS Machine Learning & AI

Education

Institutions



EdTechs



Government

Federal / Civil



State / Local



Nonprofit/Healthcare



Let us leverage AI to provide better services to citizens

<p>Health care</p> <ul style="list-style-type: none"> • Model and better identify disease incidents, exposure routes, and Mosquito control interventions • Medicare Fraud prevention • Provide better services to the disabled 	<p>Improve citizens lives</p> <ul style="list-style-type: none"> • Famine prevention • Homelessness data analysis • Poverty alienation • Prevent child trafficking 	<p>Better services through Modernization</p> <ul style="list-style-type: none"> • conversational chat bots • intelligent routing • answering questions • document translation
<p>Smart City Solutions</p> <ul style="list-style-type: none"> • Travel time • Intersection count • Better route • Parking help • Pedestrian and bicycle pathway count 	<p>Leverage Satellite technology</p> <ul style="list-style-type: none"> • Precision farming • Precision geography • Weather forecasting 	<p>Predictive maintenance</p> <p>For equipment's used by armed forces - Airforce, Navy and Army</p>
<p>National Security</p> <ul style="list-style-type: none"> • Sentiment analysis • Video surveillance • Image recognition • Threat intelligence 	<p>Maintain the lead in innovation</p> <ul style="list-style-type: none"> • Robotics • Automation • Space Exploration 	<p>Drive efficiency up and cost down</p> <ul style="list-style-type: none"> • Digital transformation • Automation • Translation services • Reduce paper work and backlogs • Overcome resource constraints

The goal of AI is to *augment* humans and *not to replace*

AI is a great technology that provides better accuracy, efficiency etc. The following clip drives the point.

Human brain is unique with its intuition and capabilities!



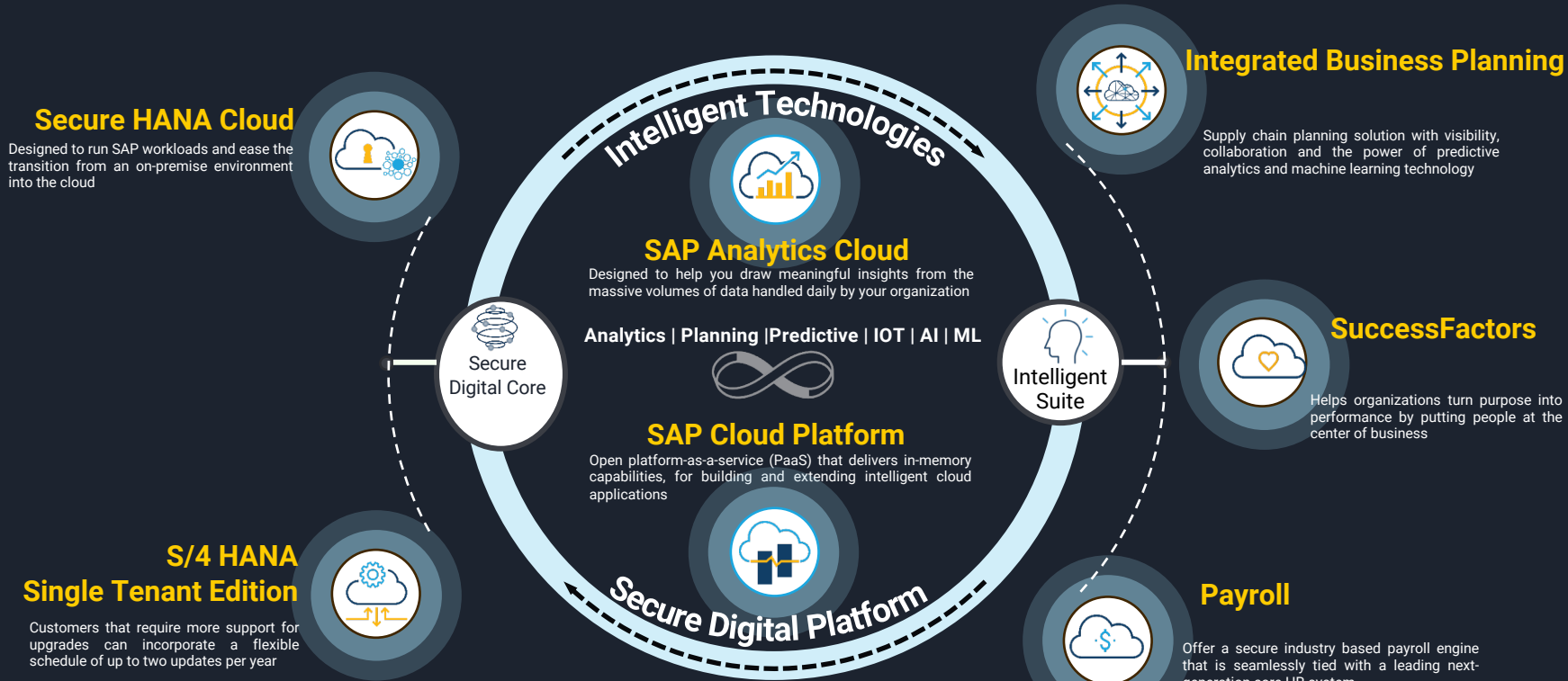
	Weight	Space	Processor Speed	Energy Efficiency
Human Brain	3 pounds (1.4 kg)	1.8 basketball (80 cubic inches or 1,300 cm ³)	Up to 1,000,000 million operations per second	20 watts
Super Computer	130 tons	Basketball court (cubinate over 4,330 square feet, or 400 m ²)	81,000 million operations per second	30 million watts

The intent of Artificial Intelligence is not to replace, but to augment humans. I personally don't believe in *"AI could be the end of the human race"*

Humans will enforce ethics and boundaries and will use this technology for the good of mankind.

AWS is the Infrastructure that powers NS2 Cloud

Creating value to the customers together



Thank you!

For Further Questions and discussions:

AI.aws or ml.aws

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