



Automated Deep Learning for Enterprises



Enabling businesses to benefit from Deep Learning

#rapid #cost-effective #within-resource-limitation

Artificial Intelligence can be adopted in many ways.

Rule Based

NLP, Classic ML, Statistical Modelling...

Hand crafted rules and highly customized models

Low Accuracy

Limited scope

High operational costs & complexity

Self-learning

Advanced ML, Deep Learning

Self-learning systems with enough training data sets

Higher Accuracies

Can solve complex tasks

Largely automated

Autonomous

Deep Learning

Adaptive systems without the need for labelled training data

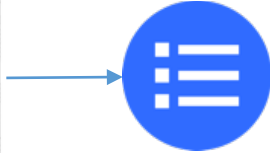
Adapt and match up with human performances at any task

Deep Learning powers the next generation 'AI' apps

Process Automation

Data extraction from dynamic unstructured data

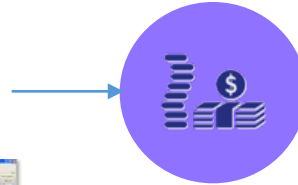
Segment, Extract, Populate



Intelligent Automation

Claims Automation

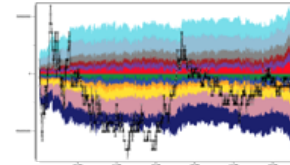
Segment, Extract, Populate, Classify, & Predict



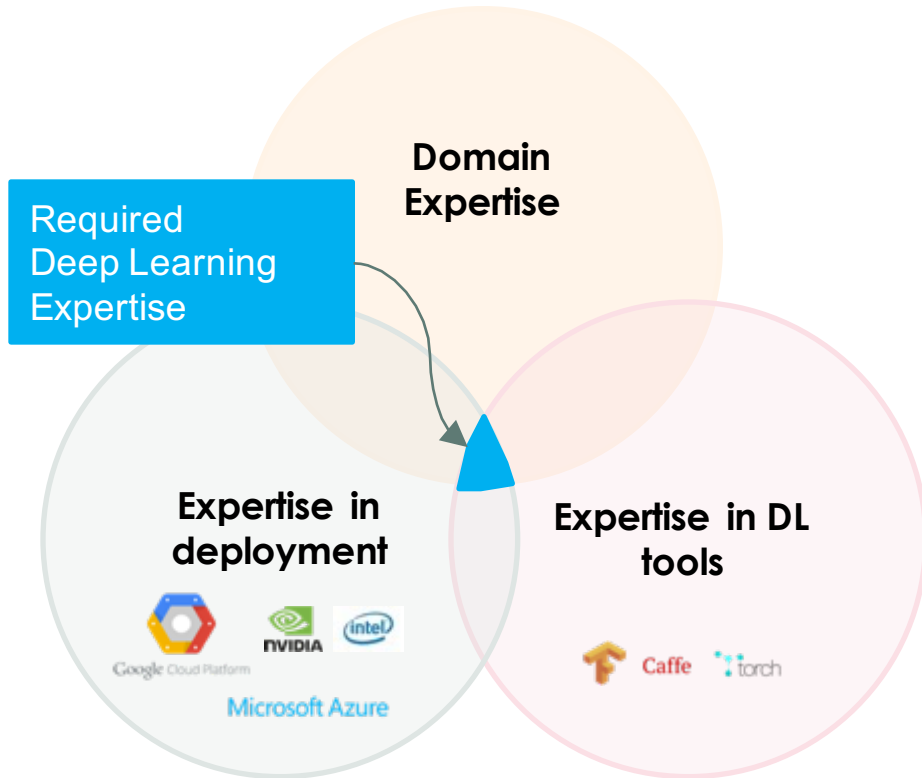
Efficiency Level

Risk Monitoring

Classify, Predict & Validate



Building Deep Learning(DL) system is **complex & time consuming**

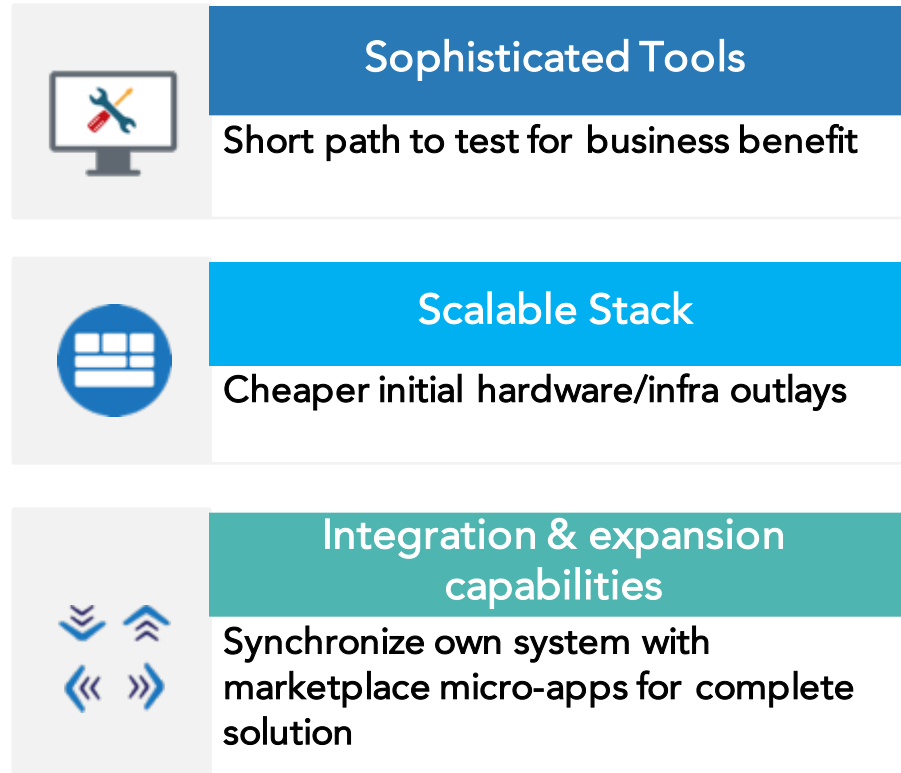


- 1 Scarce Talent Pool**
1.4Million DL scientists required in 2017 and available resources are less than 6%
- 2 Inadequate performances**
Less than 10% of DL projects goes to production
- 3 Expensive Ops & Maintenance**
DL needs huge computing power for both training and inferencing
- 4 Fast changes & disruptive**
Deep Learning gained its importance only from last 3 years leads to New hardware (TPUs, FPGAs etc); layers (GANs, Rienforcement NNs etc)..etc

Arya's approach - Helping businesses adopt Deep Learning

Use 'AI' to automate complex data science tasks in building 'AI' on a

platform





**Build Artificial Intelligence solutions
using 'Deep Learning'
that can learn and adapt
autonomously**

Arya.ai – Product Portfolio

Autonomous Modules: Vertical Deep Learning apps built and tested on large enterprise data sets

Banking



Insurance



IoT



VEGA: Workbench to build and manage DL Models/Solutions

Build Neural networks (NNs) using GUI Framework



Simulation 'AI' Automates NN Tuning



1-click dev-ops setup on-premise/cloud



Hardware

Cloud/On-premise

Case study Insurance

Customer:

Private Sector Insurance company

Industry: **Health Insurance**

Type: Decision & Process Intelligence

Purpose:

- Automatic processing of health claims based on digitized information.
- Analytical Intelligence –Flag suspicious transactions detection and other operational insights.

Health Claims: Current Process

Current Processes:

- Human decision processes for both Pre-authentication and adjunction
- Doctors and experts behind the decision
- Involves processing a lot of parameters from customer data to diagnosis data

Data Challenges to use Classic ML

- Complex data set
- Features distributed among different data sets
- Skewness in training data

User Data

Historical data

Transactional Information

Diagnosis Information

Hospital Information

....

\$80 billion

insurance fraud steal a year across all lines of insurance in US alone.

61% Insurers

report that the number of suspect frauds have increased significantly in the last 3 years

76%

of insurers are using technology to detect suspect claims

1/3rd

of SIUs expect to invest more on predictive modeling technology in 2017

Claims Processing - Health Insurance Current Process

Industry Challenges:

- **Claims Leakage:** Claims Leakage accounts 6% to 12% as percentage of paid losses
- **Operational Expensive:** 8 to 20 cents of every premium dollar pointed at loss costs and associated expenses of Claims
- **Increase in Frauds:** An estimated \$80 billion insurance fraud steal a year just in US.
- **Time consuming Process:** On an average the processing time varies from 30mins to 60mins to predict admissibility and more than 20hrs for claims settlement

Case study

Automated Claims Processing

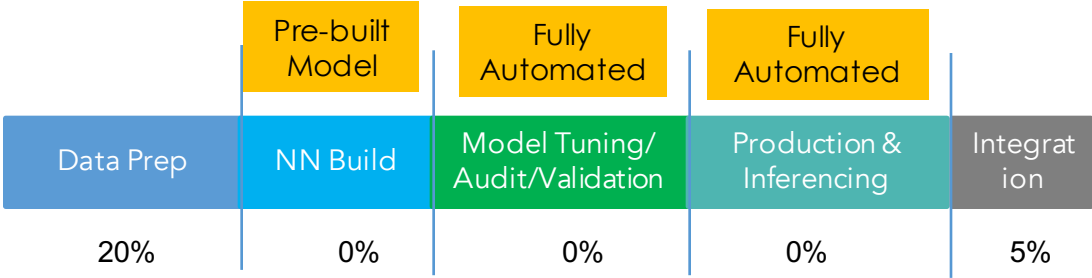


Time for training & tuning:
6 weeks

Time for Parallel run:
4 weeks

Training and integration

- Trained on more than 2yrs+ of labelled historical data
- Compared with current performance in parallel run on batch wise testing
- Feedbacks are fed into the system for final fine tunings



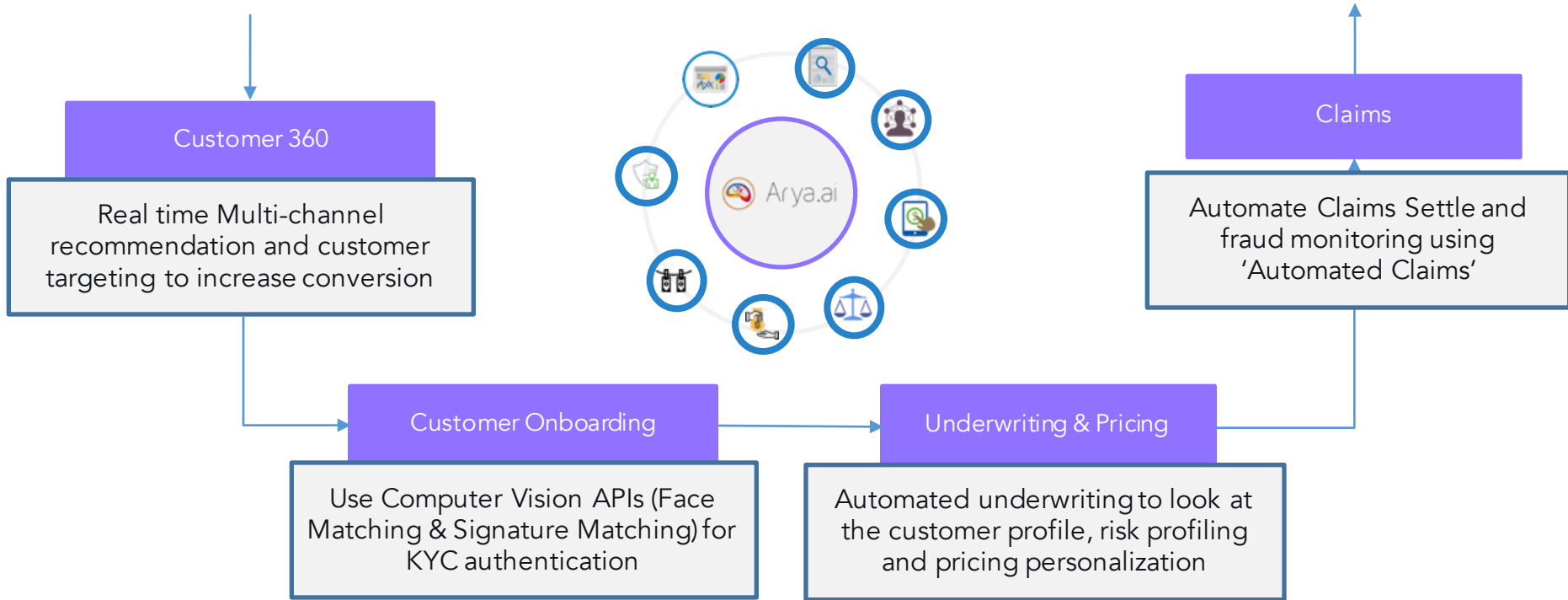
Arya.ai reduced around **75%** of resources required to use Deep learning

In production:

- The module delivered over 40% cost savings compared to current process
- Reduced the processing time considerably
- Increased the ability to scout for risk prone transactions

Going forward

Arya.ai - 'AI' Operating System for Insurance





Enterprise Deep Learning platform

“The Leading Millennial Consumer Tech Founders In Asia”



Hot startup: Algorithm for artificial intelligence is this startup's code



Top 4 Next Gen Technology startup – among 54 countries

