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

Deep Learning powers the next generation ‘AI’ apps
Building Deep Learning (DL) system is complex & time consuming.

1. **Scarce Talent Pool**
   1.4 Million DL scientists required in 2017 and available resources are less than 6%.

2. **Inadequate performances**
   Less than 10% of DL projects go 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, Reinforcement 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.

- **Sophisticated Tools**
  - Short path to test for business benefit

- **Scalable Stack**
  - Cheaper initial hardware/infra outlays

- **Integration & expansion capabilities**
  - Synchronize own system with marketplace micro-apps for complete solution
Build Artificial Intelligence solutions using ‘Deep Learning’ that can learn and adapt autonomously.
Case study
Insurance

<table>
<thead>
<tr>
<th>Customer:</th>
<th>Private Sector Insurance company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry:</td>
<td>Health Insurance</td>
</tr>
<tr>
<td>Type:</td>
<td>Decision &amp; Process Intelligence</td>
</tr>
</tbody>
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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
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

**Vega**

Automated Claims Processing

**Time for training & tuning:**
- 6 weeks

**Time for Parallel run:**
- 4 weeks

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**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

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

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### 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
Arya.ai - ‘AI’ Operating System for Insurance

**Customer Onboarding**
- Use Computer Vision APIs (Face Matching & Signature Matching) for KYC authentication

**Underwriting & Pricing**
- Automated underwriting to look at the customer profile, risk profiling and pricing personalization

**Claims**
- Automate Claims Settle and fraud monitoring using ‘Automated Claims’

**Customer 360**
- Real time Multi-channel recommendation and customer targeting to increase conversion

**Going forward**
"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