



**BHADALE GROUP OF COMPANIES  
- IT AND REAL ESTATE**



Sept 7 2019

AI Use-cases Catalogue

Bhadale IT Developers Pvt. Ltd | Bhadale Real Estate Developers Pvt. Ltd (registration due)

Plot No. 52, Hindwadi, Belgaum, KA, India | Mobile: +91- 9741040195 | Website: TBD

**Bhadale Group of Companies**

Bhadale Group of Companies consists of Bhadale IT Developers Pvt. Ltd and Bhadale Real Estate Developers Pvt Ltd.

1. **Bhadale IT Developers Pvt. Ltd** is an IT and Computer Engineering company

This company provides consultation in areas of cutting edge technologies, research outsourcing, and software consultation related to data center and related engineering practices

2. **Bhadale Real Estate Developers Pvt. Ltd** is a Real estate company

This company provides development of Infrastructure for IT Datacenter and allied sectors. It manages the engineering design, landscaping, civil architecture, presently serving internal projects.

Bhadale Group of Companies has aggressive programs in place to serve the niche market.

**Bhadale IT Developers Pvt. Ltd Programs and Services****IT Division programs**

- 1 Cloud Architecture
- 2 AI
- 3 Digital
- 4 Automation
- 5 R&D services
- 6 Engineering services
- 7 Mentoring Services
- 8 Data center services
- 9 Outsourcing

There are various services offered under each program, details are described below

**IT Division program related services****Cloud Architecture**

- Cloud Enterprise Architecture
- Cloud Business Architecture
- Cloud Information / Website data Architecture
- Cloud Solution Architecture
- Data center Virtualization and Cloud services ( IaaS)
- Cloud Technical Architecture – Project specific
- Cloud ERP Solutions ( SaaS, PaaS)
- Cloud Strategy and Transformation
- Cloud Systems Integration and consolidation
- Cloud Project Management
- Cloud Pre sales support
- Business Needs ( RFI/RFQ/RFP assistance)

- Cloud Quality Initiatives
- Cloud Business Analysis
- Cloud Infrastructure Planning – hardware , network, storage , backup ( IaaS, PaaS)
- Cloud business portfolio assessment services ( workshops)

**AI**

- Artificial intelligence and advanced machine learning
- Intelligent applications, Intelligent things
- Conversational systems
- Mesh app and service architecture
- Adaptive security architecture

**Digital**

- Virtual reality and augmented reality: Brief capability, deliverables and service offering
- Digital twins
- Blockchains and distributed ledgers
- Digital technology platforms

**Automation**

- Robotic Process Automation
- IoT
- Manufacturing robots
- BPO call center robots
- Chatbots
- Remote workers
- Hazardous jobs robots( Mine bombs, nuclear waste, underwater, space etc)

**R&D services**

- PHD mentor, buddy
- BPO - Outsourced work in areas of research areas related to IT and Computer Engineering

**Engineering services (Only Engg)**

- Engineering services for Data centers
- Engineering services for IT Departments
- Engineering architectures, drawings, road ways, town house planning, parking, safety, outdoor maintenance, lighting etc
- All other aspects of engineering: Civil, electrical, water and sewage, safety and mechanical motors, pumps, refrigeration, cooling

**Mentoring Services**

- IT Mentoring
- Engineering Mentoring
- Business Mentoring
- Mentoring for special categories based on age, and disabled
- Mentoring for special professionals like Military and Govt officials under Govt Programs

**Data center services (Engg + IT)**

- Data center Engineering services
- Data Center IT Services
- Data center Security services
- Data Center QA services
- Datacenter Cloud services
- Datacenter compliances services
- Data center based business solutions

**Outsourcing**

- Insourcing
- Outsourcing
- Near sourcing
- Cloud sourcing
- BPO services
- IT specific services
- Engineering specific services
- Training specific services

## Service details for Bhadale IT Developers Pvt. Ltd

## IT Division programs – AI Use-cases

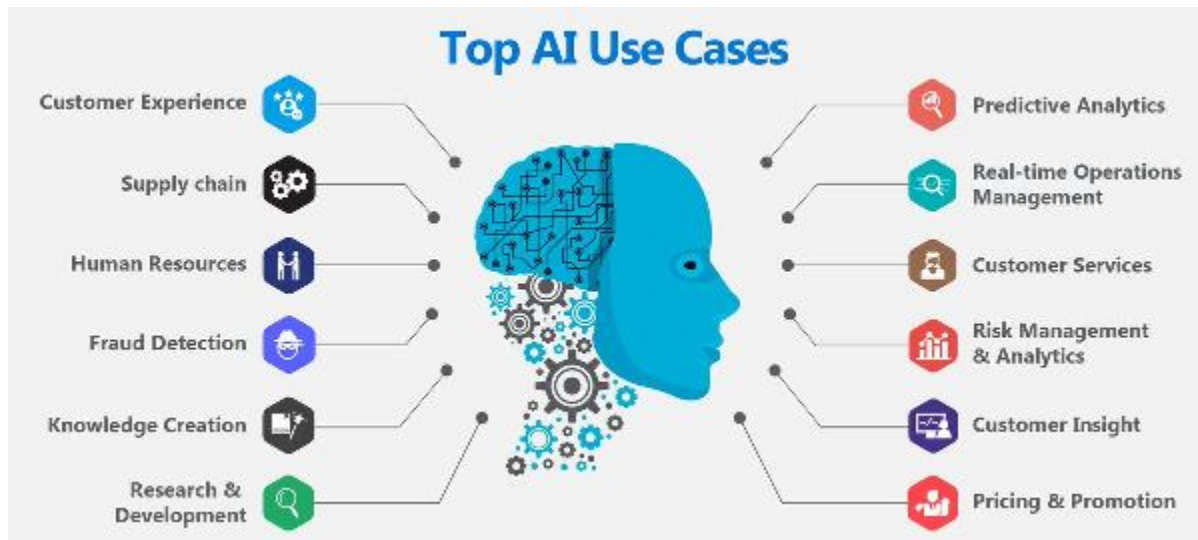
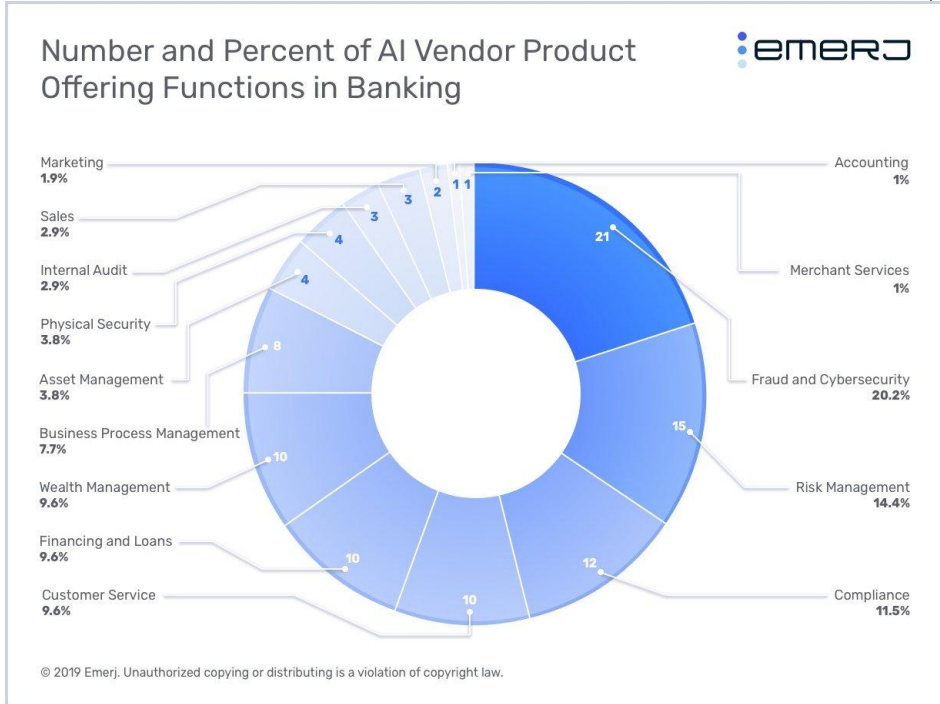


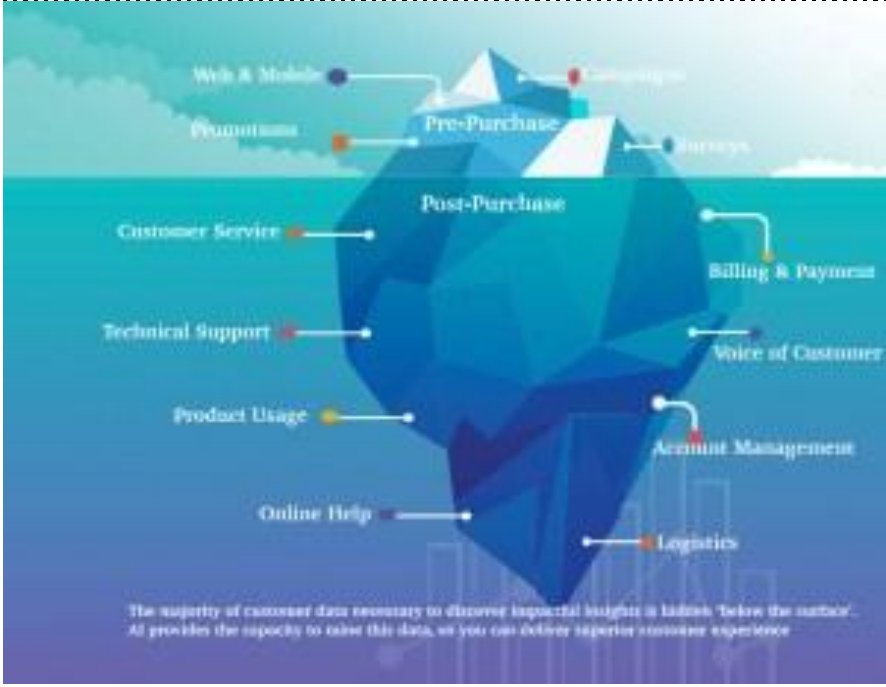
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We have a large set of subcategories; few are mentioned below with details tabulated

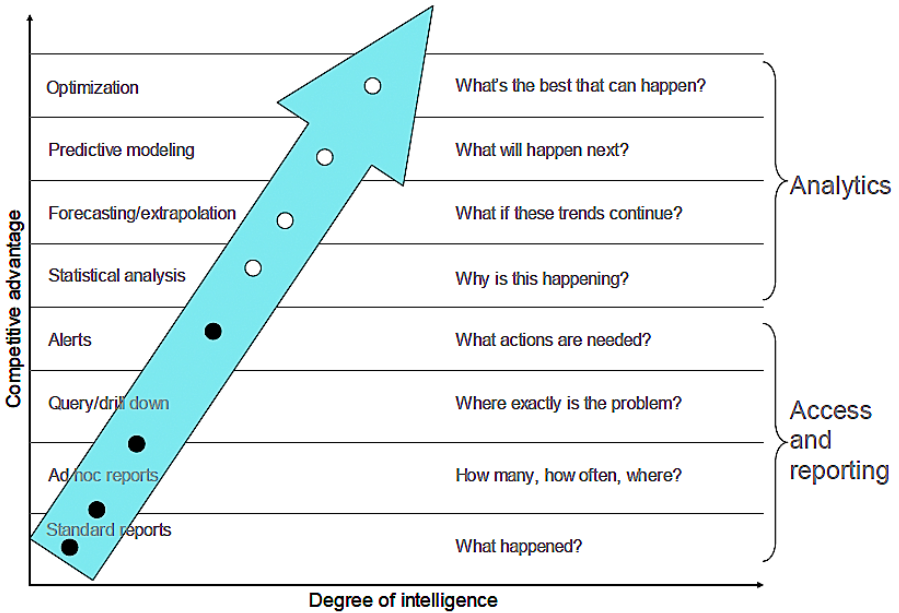
Industries / No.	Use Case Name	Real world issue / Benefits / Key NN component
1 HealthCare	<b>Predicting normal and pathological cases / Prediction of Intrapartum Hypoxia from Cardiotocography Data</b>	These classifiers include the back-propagation trained feed-forward neural network classifier (BPXNC), Levenberg–Marquardt trained feed-forward neural network classifier (LMNC), automatic neural network classifier (NEURC), radial basis function neural network classifier (RBNC), random neural network classifier (RNNC), and the perceptron linear classifier (PERLC)
2	<b>Organ Detection Using Deep Learning, Stacked autoencoder</b>	Stacked autoencoder models learn representative features of data from the given dataset in an unsupervised manner using deep neural networks. This can be promising in medical image analysis, because it can be applied to automatically analyze a diverse, large set of medical images, despite the difficulty of obtaining libraries of accurately labeled example datasets and the intrinsic abnormalities present in patient datasets.  Sparse autoencoders are trained using the backpropagation algorithm, in the same way as feed forward neural networks are trained for classification, minimize the squared-error cost function
3	<b>Classification of Electroencephalographic Signals Using Time–Frequency Images with Wavelets and Texture</b>	Identifying epileptic seizure activities automatically using electroencephalographic (EEG) signals is of great significance in the treatment of epilepsy.  EEG signals are transformed into a t–f image using short-time Fourier transform and the t–f images are further decomposed into various

	<b>Features</b>	component images by applying <b>coiflet</b> wavelet transformation. The texture descriptor, namely the local binary pattern, gray-level co-occurrence matrix, and local tetra pattern methods, are employed to compute the features from the wavelet-filtered images. The extracted features are fed into four different classifiers for t-f image classification
<b>4</b>	To predict diseases, identify high-risk patient groups, automate diagnostic tests and to increase speed and accuracy of treatment. It can also be used to improve drug formulations, predictive care, and DNA analysis	
<b>5</b> <b>Finance</b>	Intelligent automation (IPA), intelligent 'chatbot' software in online banking apps, <b>Personalized Customer Service</b> , AI-enabled tool that provides financial guidance for the bank's clients through voice and text messages, <b>Money-Laundering tracing</b> ,	
	reviews documents and extracts data in much less time than it would take a human, digital workforce through RPA, <a href="#">predictive analytics</a> software that would essentially predict which stocks will yield the highest return. The software would run through thousands of stocks at once and correlate certain data points among them to positive stock returns, software could churn out credit scores that take more than a customer's past credit history into account, automating the claims process and reducing	<a href="https://www.pwc.com/us/en/industries/financial-services/robotic-process-automation.html">https://www.pwc.com/us/en/industries/financial-services/robotic-process-automation.html</a>

	overpayments and claim leakage																																														
6	<p>Customizing Insurance Policies, Identity Verification at ATMs</p> <p><a href="https://emerj.com/ai-sector-overviews/ai-in-banking-analysis/">https://emerj.com/ai-sector-overviews/ai-in-banking-analysis/</a></p>	<p><a href="https://emerj.com/ai-sector-overviews/artificial-intelligence-in-finance-a-comprehensive-overview/">https://emerj.com/ai-sector-overviews/artificial-intelligence-in-finance-a-comprehensive-overview/</a></p>  <p>Number and Percent of AI Vendor Product Offering Functions in Banking</p> <p>© 2019 Emerj. Unauthorized copying or distributing is a violation of copyright law.</p> <table border="1"> <thead> <tr> <th>Function</th> <th>Number</th> <th>Percent</th> </tr> </thead> <tbody> <tr><td>Marketing</td><td>21</td><td>1.9%</td></tr> <tr><td>Sales</td><td>2</td><td>2.9%</td></tr> <tr><td>Internal Audit</td><td>3</td><td>2.9%</td></tr> <tr><td>Physical Security</td><td>4</td><td>3.8%</td></tr> <tr><td>Asset Management</td><td>4</td><td>3.8%</td></tr> <tr><td>Business Process Management</td><td>6</td><td>7.7%</td></tr> <tr><td>Wealth Management</td><td>10</td><td>9.6%</td></tr> <tr><td>Financing and Loans</td><td>10</td><td>9.6%</td></tr> <tr><td>Customer Service</td><td>10</td><td>9.6%</td></tr> <tr><td>Accounting</td><td>1</td><td>1%</td></tr> <tr><td>Merchant Services</td><td>1</td><td>1%</td></tr> <tr><td>Fraud and Cybersecurity</td><td>15</td><td>20.2%</td></tr> <tr><td>Risk Management</td><td>12</td><td>14.4%</td></tr> <tr><td>Compliance</td><td>10</td><td>11.5%</td></tr> </tbody> </table>	Function	Number	Percent	Marketing	21	1.9%	Sales	2	2.9%	Internal Audit	3	2.9%	Physical Security	4	3.8%	Asset Management	4	3.8%	Business Process Management	6	7.7%	Wealth Management	10	9.6%	Financing and Loans	10	9.6%	Customer Service	10	9.6%	Accounting	1	1%	Merchant Services	1	1%	Fraud and Cybersecurity	15	20.2%	Risk Management	12	14.4%	Compliance	10	11.5%
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7 Customer Experience	Empowering self-service	Using self-service, easy to use Chat- bots with bill, product, or service, will reduce wait/ hold time, improve personalized service helps in better CX.																																													
8	Improving Personalization	Offering individual levels offerings based on shopping habits, online habits, and social activities																																													
9	Quicker responses to RFI/RFP	Offer ready to use content with personalized touch by a team of experts in final assembly of a standard offering leading to lesser time, effort and time spent by sales team. This helps quicker decisions by client																																													

10	<p><b>Pre and Post sales –</b> helping clients experience better use of their investment by offering low cost out of warranty services, replacements for unknown issues etc. This enables referrals to others.</p>	 <p><a href="https://www.pointillist.com/blog/role-of-ai-in-customer-experience/">https://www.pointillist.com/blog/role-of-ai-in-customer-experience/</a></p>
11 Energy and Mining	<ul style="list-style-type: none"> <li>• <b>Energy Forecasting</b></li> <li>• <b>Energy Efficiency</b></li> <li>• <b>Energy Accessibility</b></li> </ul>	<ul style="list-style-type: none"> <li>• Industry data is used to train AI algorithms to make accurate forecasts, helping to inform power supply and demand</li> <li>• AI is used to track and optimize how energy efficiency, help clients optimize energy consumption</li> <li>• AI is used to model utility cost savings and provide recommendations for smart home investments, smart home improvement projects” based on the unique features and energy usage in a client’s home</li> </ul> <p><a href="https://emerj.com/ai-sector-overviews/artificial-intelligence-for-energy-efficiency-and-renewable-energy/">https://emerj.com/ai-sector-overviews/artificial-intelligence-for-energy-efficiency-and-renewable-energy/</a></p>
12	<p><b>Improving mining resource discovery and planning with AI</b></p>	<p>AI is to learn more about the terrain that they are working with. The computer is able to much more precisely map out and predict terrain than a human.</p> <p>Through the use of pattern matching, predictive analytics, and even computer vision systems that can process map and geological data AI is able to analyze vast quantities of data to better predict where to find better resources.</p>
13	<p><b>Intelligent drones and autonomous machines</b></p>	<p>Companies are using drones to scan over their mining operations, keeping an eye on quarry and waste piles, environmental issues, retention and leaching ponds, and pipeline infrastructure.</p> <p>Through the use of AI-powered autonomous systems, mining and energy companies are making greater use of self-controlling machines in harsh environments.</p> <p>By attaching cameras and sensors to the equipment companies can detect issues in the mine such as gas levels and structural instability.</p>



14	<b>Mining Big data</b>	<p>Gather information, process data, use Genetic algorithms to minimize process energy usage by selecting the best operational set point and machine selection, advice operators on running process to optimal conditions. Use / design Mining expert system for operations and enhancements.</p> <p><a href="https://energysavingsdatamining.com/">https://energysavingsdatamining.com/</a></p>
15 <b>Manufacturing</b>	<p>From preventative maintenance to the automation of human tasks, AI will perform manufacturing, quality control, shorten design time, and reduce materials waste, improve production reuse, perform predictive maintenance,</p>	<p>A robotic prototype from Siemens automatically reads and follows CAD instructions to build parts without programming.</p> <p>Product parts and process information are semantically converted into ontologies and knowledge graphs,” says Wurm. “This makes implicit information explicit</p> <p>Self-assembly of discrete parts and recover from parts slipped away, wrong part, error in fitments etc</p> <p><a href="https://nordcloud.com/10-examples-of-ai-in-manufacturing-to-inspire-your-smart-factory/">https://nordcloud.com/10-examples-of-ai-in-manufacturing-to-inspire-your-smart-factory/</a></p>
16	robot-driven assembly lines to intelligent systems that can predict the malfunctioning of machinery	<p>Industry 4.0- Predictive maintenance uses advanced AI algorithms in the form of machine learning and <a href="#">artificial neural networks</a> to formulate predictions regarding asset malfunction. Quality 4.0 involves the use of AI algorithms to notify manufacturing teams of emerging production faults that are likely to cause product quality issues. Faults can include deviations from recipes, subtle abnormalities in machine behavior, change in raw materials, and more.</p>
17	AI Enabled BI	
18 <b>BI and Analytics</b>		<p><b>Business intelligence and analytics</b></p>  <p>The diagram illustrates the progression of Business Intelligence and Analytics. A large blue arrow points upwards, representing increasing competitive advantage and degree of intelligence. The arrow is divided into two main sections: 'Access and reporting' (bottom) and 'Analytics' (top). The 'Access and reporting' section includes 'Standard reports', 'Ad hoc reports', and 'Query/drill down'. The 'Analytics' section includes 'Statistical analysis', 'Forecasting/extrapolation', 'Predictive modeling', and 'Optimization'. The y-axis is labeled 'Competitive advantage' and the x-axis is labeled 'Degree of intelligence'.</p> <p>Today, BI vendors are already introducing AI capabilities in their products for data preparation, data discovery, and data science.</p>

19	<b>AI enabled BI process automation</b>	<p>Eliminate the BI assembly line using ML automation, to provide actionable business insights</p> <p><a href="https://www.birst.com/blog/will-ai-increase-the-reach-of-bi-and-analytics/">https://www.birst.com/blog/will-ai-increase-the-reach-of-bi-and-analytics/</a></p> <p><a href="https://www.jenunderwood.com/2019/04/22/demystifying-automated-analytics-ai-in-bi-and-automl/">https://www.jenunderwood.com/2019/04/22/demystifying-automated-analytics-ai-in-bi-and-automl/</a></p> <p>Examples of embedded AI in BI that you cannot control includes algorithms to automatically join two tables, detect data types, make recommendations for charts, reports, or data corrections, or create alerts on data value changes. Some vendors use AI-driven BI terms to describe automated exploratory analysis</p>
20		
21		
22	<b>Retail</b>	<p>Retailers will use augmented and virtual reality functionality in advertising. Immersive product catalog visualization will grow dramatically, and shoppers will experience products before buying</p>
23		
24		
25		
26	<b>Stock trading</b>	<p><b>Algorithmic trading</b></p> <p>Use of ML to learn the buying / selling patterns, learning from historical crashes, learning a-prior before an event occurs, chart analysis, real time NLP feed analysis, responses, chat bots that help trade at odd hours, or run in auto mode during intervals.</p> <p>Trade for private hedge fund with a proprietary algorithm, leverage on Eugene's efficient-market hypothesis</p> <p>Many firms use AI technologies including deep learning and one inspired by genetic evolution to power its AI trading team.</p> <p><a href="https://www.devteam.space/blog/artificial-intelligence-in-stock-trading-future-trends/">https://www.devteam.space/blog/artificial-intelligence-in-stock-trading-future-trends/</a></p> <p><a href="https://www.forbes.com/sites/bernardmarr/2019/02/15/the-revolutionary-way-of-using-artificial-intelligence-in-hedge-funds-the-case-of-aidyia/#53339bc257ca">https://www.forbes.com/sites/bernardmarr/2019/02/15/the-revolutionary-way-of-using-artificial-intelligence-in-hedge-funds-the-case-of-aidyia/#53339bc257ca</a></p>
27		
28		
29		
30	<b>Call Centers</b>	<p><b>AI Assistants- bots</b></p> <p>If you're a customer service agent and you're on a call with a customer, AI is going to send you popup messages on your display, like, "You're talking too much."</p>
31	<b>Knowledge base</b>	<p>AI could aggregate all current and historical information about the person and present the agent with the most likely reason for contact</p>

32	<b>Real agent Automation</b>	AI-based call routing to best person to handle the call
31		Processes that require technical support /ticketing usually pass through ITIL/Jeera processes. RPA helps in automating back office operations like doc processing, bookings, emailing tickets, invoices, alerts based on users subscriptions with the company
33		
34 Military		<a href="http://mil-embedded.com/articles/applying-techniques-expand-defense-capabilities/">http://mil-embedded.com/articles/applying-techniques-expand-defense-capabilities/</a>  <a href="https://blog.marketresearch.com/8-key-military-applications-for-artificial-intelligence-in-2018">https://blog.marketresearch.com/8-key-military-applications-for-artificial-intelligence-in-2018</a>  <a href="https://emerj.com/ai-sector-overviews/artificial-intelligence-in-the-military-an-overview-of-capabilities/">https://emerj.com/ai-sector-overviews/artificial-intelligence-in-the-military-an-overview-of-capabilities/</a>  <a href="https://www.claws.in/1878/military-applications-of-artificial-intelligence-deepak-kumar-gupta.html">https://www.claws.in/1878/military-applications-of-artificial-intelligence-deepak-kumar-gupta.html</a>
35		
36		
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38		
39 Sales and Marketing	Product recommendations and predictive lead scoring	<p>Common predictions that sales AI systems can make include:</p> <ul style="list-style-type: none"> <li>• Deals or prospects most likely to close.</li> <li>• Deals or prospects to target next.</li> <li>• New customers that may be interested in what you're selling.</li> </ul>
40	Intelligent software can contact 100 percent of leads, qualify leads	<a href="#">Conversica</a> is a major player in the space, with \$87 million in funding. The company provides an automated AI sales assistant that engages your leads in conversation. The AI assistant conducts conversations with leads, further qualifying them before they talk to a rep.
41	More customer-centric campaigns, field sales,	
42	Sales data mining and generating BI for better sales	
43	<b>Personalized marketing / Predictive marketing</b>	<p>Messages based on in-depth knowledge of the behavior of potential customers.</p> <p>Predictive marketing places you in a position where customers will be receptive to your message</p>
	<b>Content curation</b>	<p>It's a great way to engage site visitors by presenting them with content that they would be interested in.</p> <p>Sales and marketing AI software can screen emails as well as organize schedules and prioritize communications.</p>
	<b>Manage Admin tasks</b>	AI bots can help organize, plan, schedule as per your calendar and schedule
	<b>Expert</b>	These recommendations may include advice on how to price a deal, who to

	<b>Recommendations</b>	<p>target next, or which customers to target first with upsells or cross-sells.</p> <p>The result is targeted guidance on what actions to take, so salespeople can free up bandwidth to close deals, rather than deliberating about what to do next. Salesforce Einstein is a prime example</p>
<b>44</b> <b>Cybersecurity</b>	<b>Cognitive security</b>	<p>Cognitive computing, an advanced type of artificial intelligences, leverages various forms of AI, including machine-learning algorithms and deep-learning networks, that get stronger and smarter over time. Watson™ for Cyber Security, IBM's cognitive AI, learns with each interaction to connect the dots between threats and provide actionable insights. IBM QRadar® Advisor with Watson. IBM Resilient® open and agnostic platform integrates with your security infrastructure and establishes a central hub for managing your response playbook</p>
<b>45</b>	<b>Apps</b>	<ul style="list-style-type: none"> <li>• Spam Filter Applications (spamassassin)</li> <li>• Network Intrusion Detection and Prevention</li> <li>• Fraud detection</li> <li>• Credit scoring and next-best offers</li> <li>• Botnet Detection</li> <li>• Secure User Authentication</li> <li>• Cyber security Ratings</li> <li>• Hacking Incident Forecasting</li> </ul> <p>Spamassassin, for instance, is a project that is an open source code and it does spam mail filtering. Normshield <a href="#">Cyber Risk Scorecard</a>, scans most of the information about your company, that can be accessed via internet.</p>
<b>46</b>	<b>Bots</b>	<p>AEG (automatic exploit generation) is the “first <a href="#">end-to-end system for fully automatic exploit generation</a>,” . If found, the bot autonomously produces a “working control flow hijack exploit string” i.e. secures vulnerabilities.</p> <p><a href="https://emerj.com/ai-sector-overviews/artificial-intelligence-and-security-applications/">https://emerj.com/ai-sector-overviews/artificial-intelligence-and-security-applications/</a></p>
<b>47</b>	<b>Predictors</b>	<p>MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) and machine-learning startup <a href="#">PatternEx</a> recently developed an <a href="#">artificial intelligence platform called AI2</a> that they claim predicts cyber-attacks significantly better than existing systems by continuously incorporating input from human experts. The technology is leveraged by a continuous loop of feedback between the human analyst and AI system, called Active Contextual Modeling, and is able to learn in real-time.</p>
<b>48</b>	<b>IoT Systems Security</b>	<p><a href="#">IBM's Watson for IoT</a></p>
<b>49</b>	<b>Airport security</b>	<p><a href="#">DARMS</a>, short for Dynamic Aviation Risk Management Solution, the smart system will integrate information across the aviation sector to tailor a personalized security profile for each person, on a per-flight basis. A smart tunnel will checks people's security while they walk through it, eliminating the need for inefficient security lines.</p>
<b>DevOps And Cloud Hosting</b>	Amazon has rolled out machine learning for their Elastic Compute Cloud (EC2) instances, which applies to	

	predictive instance autoscaling	
<b>Remote / telemetry</b>		
<b>Construction</b>		
<b>Deep sea exploration</b>		
<b>Senior Care</b>		
<b>Fashion</b>		
<b>Supply Chain Management</b>		
<b>Transportatio n</b>	Connected cars are the in-thing in the automobile industry right now, where predictive mechanisms accurately tell drivers the probable malfunctioning of spare parts, routes and driving directions, emergency and disaster prevention protocols and more.	
<b>Talent management</b>		
<b>Telecom</b>		<a href="https://arxiv.org/abs/1810.00300">https://arxiv.org/abs/1810.00300</a>
		<a href="https://www.groundai.com/project/cognitive-lpwan-towards-intelligent-wireless-services-in-hybrid-low-power-wide-area-networks/1">https://www.groundai.com/project/cognitive-lpwan-towards-intelligent-wireless-services-in-hybrid-low-power-wide-area-networks/1</a>
<b>Space technologies</b>		
<b>Quantum</b>		

technologies		
Advanced materials / Nano technologies		
Clean Tech		
Social Innovations		
Govt / public Sectors / Federal / Provincial		

<https://www.cmswire.com/information-management/11-industries-being-disrupted-by-ai/>

<https://www.forbes.com/sites/forbestechcouncil/2019/01/16/13-industries-soon-to-be-revolutionized-by-artificial-intelligence/#4bc168c43dc1>

<https://analyticstraining.com/5-industries-which-rely-heavily-on-artificial-intelligence-and-machine-learning/>

TODO:

1. Search for use cases, real world working examples that use AI,ML, DL to solve unique problems in various industries.
2. Show how you are capable of delivering a great solution, prototypes and end to end implementation guidance.
3. Design solutions documents for various use cases that you feel are required for each industry where you can work

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For more details, contact below:

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