SMARTINTERNZ – APPLIED DATA SCIENCE TRACK

ASSIGNMENT 1

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Q. Understand and list down 20 use-cases of Artificial Intelligence / Machine Learning.

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1. **Social Listening & Ticketing**: Leverage Natural Language Processing and machine vision to identify customers to contact and respond to them automatically or assign them to relevant agents, increasing customer satisfaction. Use the data available in social networks to uncover whom to sell and what to sell.

2. **Performance Management**: Manage your employees' performance effectively and fairly without hurting their motivation. Follow their KPI's on your dashboard and provide real-time feedback. This would increase employee satisfaction and lower your organization's employee turnover. Actualize your employee's maximum professional potential with the right tools.

3. **HR Retention Management**: Predict which employees are likely to churn and improve their job satisfaction to retain them. Detect the underlying reasons for their motive for seeking new opportunities. By keeping them at your organization, lower your human capital loss.

4. **Autonomous Cybersecurity Systems**: Utilize learning systems to efficiently and instantaneously respond to security threats, often

augmenting the work of security analysts. Lower your risk of human errors by providing greater autonomy for your cybersecurity. AI-backed systems can check compliance with standards.

5. **Smart Security Systems**: AI-powered autonomous security systems. Functioning 24/7 for achieving maximum protection. Computer vision for detecting even the tiniest anomalies in your environment. Automate emergency response procedures by instant notification capabilities.

6. **Intelligent Call Routing**: Route calls to the most capable agents available. Intelligent routing systems incorporate data from all customer interactions to optimize the customer satisfaction. Based on the customer profile and your agent's performance, you can deliver the right service with the right agent and achieve superior net promoter scores.

7. **Call Classification**: Leverage natural language processing (NLP) to understand what the customer wants to achieve so your agents can focus on higher value-added activities. Before channelling the call, identify the nature of your customers' needs and let the right department handle the problem. Increase efficiency with higher satisfaction rates.

8. **Voice Authentication**: Authenticate customers without passwords leveraging biometry to improve customer satisfaction and reduce issues related to forgotten passwords. Their unique voice id will be their most secure key for accessing confidential information. Instead of the last four digits of SSN, customers will gain access by using their voice.

9. **Call Intent Discovery**: Leverage Natural Language Processing and machine learning to estimate and manage customer's intent (e.g., churn) to improve customer satisfaction and business metrics. Sentiment analysis through the customer's voice level and pitch. Detect the micro-emotions that drive the decision-making process.

10. **Vehicle Cybersecurity**: Secure connected and autonomous cars and other vehicles with intelligent cybersecurity solutions. Guarantee your safety by hack-proof mechanisms. Protect your intelligent systems from attacks.

11. **Vision Systems**: Vision systems for self-driving cars. Integrate vision sensing and processing in your vehicle. Achieve your goals with the help of computer vision.

12. **Customer Service Response Suggestions**: Bots will listen in on agents' calls suggesting best practice answers to improve customer satisfaction and standardize customer experience. Increase upsells and cross-sells by giving the right suggestion. Responses will be standardized, and the best possible approach will serve the benefit of the customer.

13. **Chatbot**: Chatbots can understand more complicated queries as AI algorithms improve. Thus, businesses understand their customers better since chatbots collect information from customers while interacting with them and spot their weaknesses. There are other benefits like 24/7 availability and reduced costs, as bots can handle more tasks as they learn more. All these benefits significantly improve the customer satisfaction of businesses.

14. **Customer Service Chatbot (Self – Service Solution)**: Build your own 24/7 functioning, intelligent, self-improving chatbots to handle most queries and transfer customers to live agents when needed. Reduce customer service costs and increase customer satisfaction. Reduce the traffic on your existing customer representatives and make them focus on the more specific needs of your customers.

15. **Call Analytics**: Advanced analytics on call data to uncover insights to improve customer satisfaction and increase efficiency. Find patterns and optimize your results. Analyze customer reviews through voice data and pinpoint, where there is room for improvement. Sestek indicates that ING

Bank observed a 15% increase in sales quality score and a 3% decrease in overall silence rates after they integrated AI into their call systems.

16. **Survey & Review Analytics**: Leverage Natural Language Processing to analyze text fields in surveys and reviews to uncover insights to improve customer satisfaction and increase efficiency. Automate the process by mapping the right keywords with the right scores. Make it possible to lower the time for generating reports. Protobrand states that they used to do review analytics manually through the hand-coding of the data, but now it automates much of the analytical work with Gavagai. This helps the company to collect larger quantitative volumes of qualitative data and still complete the analytical work in a timely and efficient manner.

17. **Customer Contact Analytics**: Advanced analytics on all customer contact data to uncover insights to improve customer satisfaction and increase efficiency. Utilize Natural Language Processing for higher customer satisfaction rates.

18. **Early Diagnosis**: Analyze chronic conditions leveraging lab data and other medical data to enable early diagnosis. Provide a detailed report on the likelihood of the development of certain diseases with genetic data. Integrate the right care plan for eliminating or reducing the risk factors.

19. **Data Transformation**: Transform your data to prepare it for advanced analytics. If it is unstructured, adjust it for the required format.

20. **AppDev**: App development platforms for your custom projects. Your in-house development team can create original projects for your specific business needs. These platforms will help your team with the necessary tools.

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