**מבנה דו"ח פרוייקט**

1. מבוא: נסכם בקצרה מבנה התוכנה + תיאור כללי של הפרויקט
2. תיאוריה: תאר אלגוריתמים שנבחרו לפרויקט בכלליות. דנו ברלוונטיות ובמגבלות שלהם
3. שיטות: תאר את האלגוריתם וכיצד הוא מיושם בתוכנית (בפרטים)
4. אימות התוכנית: אשר כי התוכנית שלך אינה שגויה על ידי בחינת מקרים מיוחדים (מקרי קצה). יש לבדוק עבור מספר רב של הרצות.
5. תוצאות: הצג את התוצאות בצורה גרפית או טבלתית. ניתן לכלול ריצות נוספות בנספח. דונו בתוצאות
6. ניתוח: סכמו את התוצאות שלכם והסבירו אותן במונחים פשוטים ככל שניתן
7. ביקורת: סיכמו את המושגים החשובים שעבורם השגת הבנה טובה יותר ודנו בטכניקות החישוביות/ אלגוריתמים שלמדתם. תנו הערות ספציפיות על המשימה ועל הצעותיכם לשיפורים או דרכים חלופות.
8. נספח: תן רשימה טיפוסית של התוכנית שלך. התוכנית צריכה לכלול את שמך ותאריך ולהיות מסבירה את עצמה (הערות, מבנה) ככל האפשר
9. רשימת מקורות ספרות מאמרים

**הצעות אפשריות לפרויקטים**

**Games** – Many online games and gaming software can be powered by AI so that it learns first from the opponent and masters the gaming skills. Thus AI-powered games are simulating software that is used to master the games for which it is programmed.

**Internet of Things at Home** – One of the largest industries after self-driving vehicles is the IoT at home which makes virtually every gadget at home and makes home automation easier and you can switch on and off, leave instructions to record programs on TV, washing machines, toaster and refrigerator and so on.

**Social Networking** – Social Networking is at its peak in today’s world. Facebook which is a social networking website can identify faces with the help of AI face recognition software and suggest recommendations to tag the photos which you have uploaded.

**Spotify** – This is not only a music app but with the help of AI it can learn from you which music types are preferred by you and recommend you the correct music choice from the list of thousands of music.

**Essay graders and Plagiarism Analyzers** – Essay graders are powered by AI can help teachers to grade the essays of the number of students in very less time. This helps teachers of strenuous manual tasks of looking at each student’s essay. Another significant development in AI is the plagiarism analyzers are powered by AI can scan billions of online contents to analyze whether the author has duplicated the text, and can give you the results. This is still in the developing stage as most of the plagiarism analyzers today are not powered by AI.

**Advertising and Product suggestions** – AI in digital marketing, advertising, and product suggestions is one thing that uses AI in a completely different way. 2020 is the world of targeted advertising online. This means when you visit a website and look for some items to purchase, the algorithm scans millions of ads and can recommend the most relevant ads that you are looking for. Thus AI in marketing and advertising is a big digital market today. Even organizations giants such as Google and Amazon rely on ads to market their products. Amazon uses AI increasingly for providing product suggestions when any user or individual browse the Amazon website, and that too even without logging in.

**Email Segregation such as spam and phishing filters** – One of the latest trends in the cybersecurity market is email segregation using the AI for detecting, tracking, and analyzing the keywords in the emails to filter the emails for spam and phishing emails. The spam emails are dangerous because if they are not controlled, it occupies the space, delivers the malicious payload, and can cause security vulnerabilities. Similarly, the spear-phishing or the targeted phishing emails are malicious and can collect personal information about an individual for malicious intents such as stealing the data or stealing the money from the bank accounts, etc.

**Amazon Retail shop** – This is tracking, analyzing huge and complex data from various data sources to manage and predict customer habits, customer shopping preferences, cost-effective products, manage vendors, manage delivery, forecast the revenue, provide discounts, predict customer’s future shopping, etc.   Again AI is used for all these features by Amazon which is a retail company having presence all over the world. This is a very good AI project for the beginners to try it out. Statistics, Probability, Calculus, Matrices, and Vectors are used increasingly in AI.

**Self-Driving Truck Simulator with Reinforcement Learning –**

<https://www.youtube.com/watch?v=59iNsSnAUfA&feature=youtu.be&ab_channel=AlexanderJung>

**Reinforcement Learning**

https://gym.openai.com/

https://www.pygame.org/news