■ Study Notes

Of course! Here are the concise, visual study notes based on your content.

■ Key Concepts

- • **Machine Learning (ML)**: A program that learns from experience to get better at a task.
- • **Learning Program**: Another name for a machine learning program.
- • **Experience (E)**: The data or past events the program uses to learn. ■
- • **Task (T)**: The specific job the program is designed to perform. ■
- • **Performance (P)**: How well the program completes its task, measured by a specific metric. ■

■ Important Points

- • A program learns if its **performance (P)** at a **task (T)** improves with **experience (E)**.
- • ML has evolved to be used in many different fields. ■
- • A key application is in **robotics**, making machines more intelligent. ■
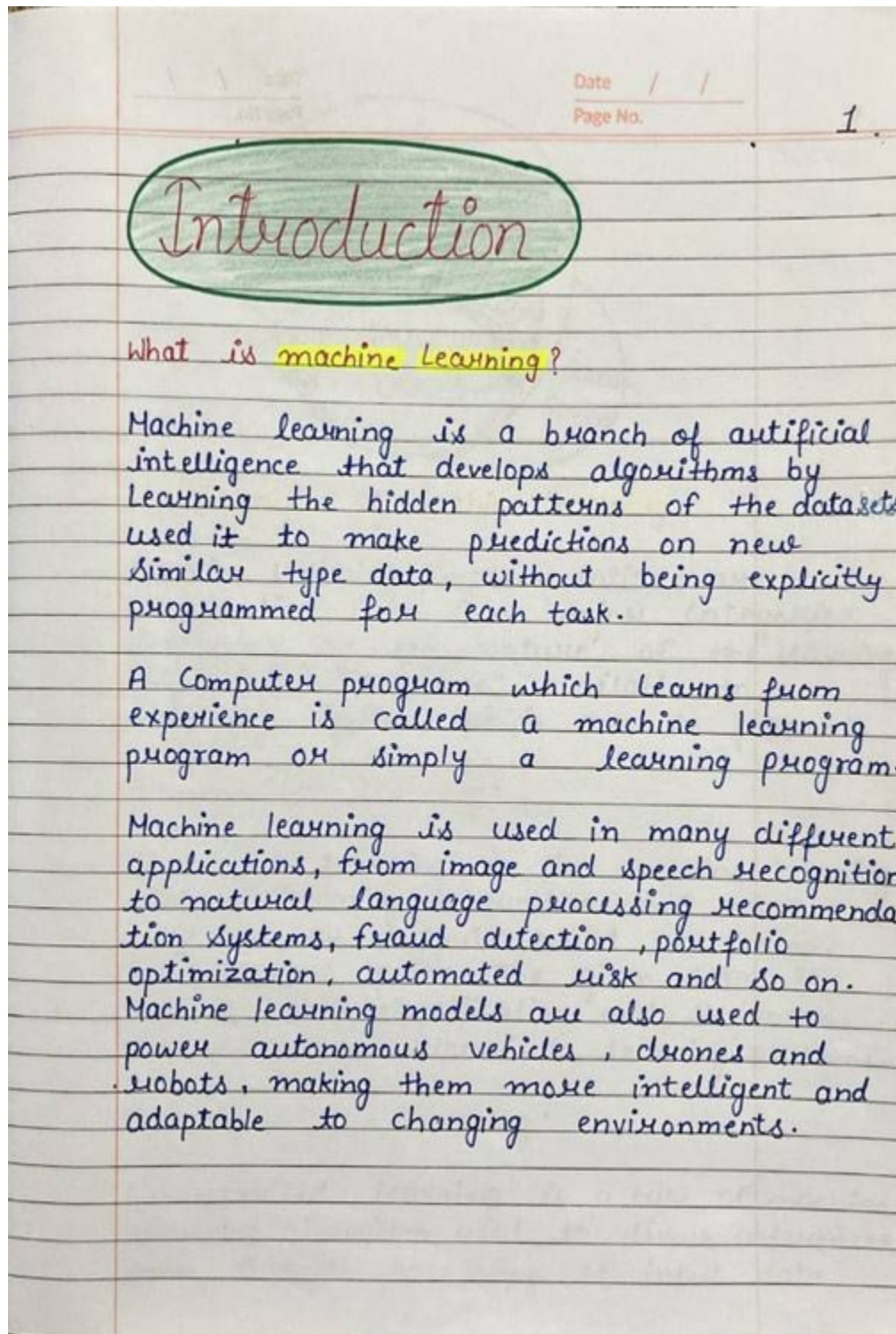
■ Quick Facts

- • Better Experience → Better Performance.
- • ML is a core part of modern Artificial Intelligence (AI).
- • The goal is for the program to improve automatically, without being re-programmed by a human.

■ Memory Tips

- • **Remember T, P, E with the phrase**: "**T**o **P**erform **E**xcellently"
- • **Think of it like learning a game**:
- • **T**ask: Win the game ■
- • **E**xperience: Playing many rounds ■
- • **P**erformance: Your win rate or score ■

■ Reference Images

Image 1

Introduction

What is machine Learning?

Machine learning is a branch of artificial intelligence that develops algorithms by learning the hidden patterns of the datasets used it to make predictions on new similar type data, without being explicitly programmed for each task.

A computer program which learns from experience is called a machine learning program or simply a learning program.

Machine learning is used in many different applications, from image and speech recognition to natural language processing recommendation systems, fraud detection, portfolio optimization, automated risk and so on. Machine learning models are also used to power autonomous vehicles, drones and robots, making them more intelligent and adaptable to changing environments.

■■ Concept Mind Map