# MACHINES LEARNING? YES, AND SMARTER THAN YOU'D THINK!

**"Machine Learning: Where Computers Get Schooled on Human Smarts, So They Can Do the Heavy Lifting Without Breaking a Sweat !"**


**Authors**

**Xingyu Yan & Hao Zhu & Yuqi Zhang & Yuhan Liu & Jiachen Xu**


## INTRODUCTION

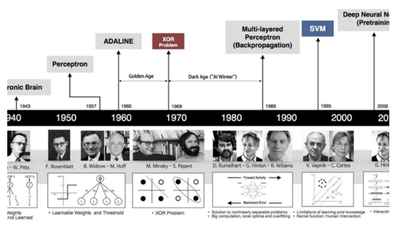
Machine learning is like AI's nosy neighbor. It peeks over the fence, watches human shenanigans, munches on data, and learns to act without us holding its hand.

It's like teaching a robot to become a mini-you, just by spying on your every move!

## WHY MACHINE LEARNING?

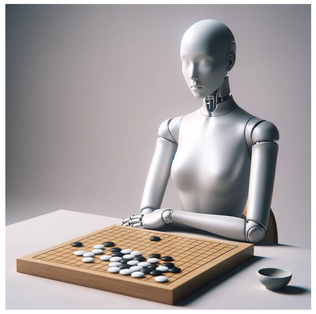
SMachine learning excels at tackling complex problems like NLP and CV, automates tasks, and finds optimized solutions to boost efficiency. It personalizes experiences based on user data, offering tailored recommendations and targeted ads. Additionally, it predicts future events, aiding in business decisions and everyday life, such as weather forecasts and business analytics.

The development of machine learning



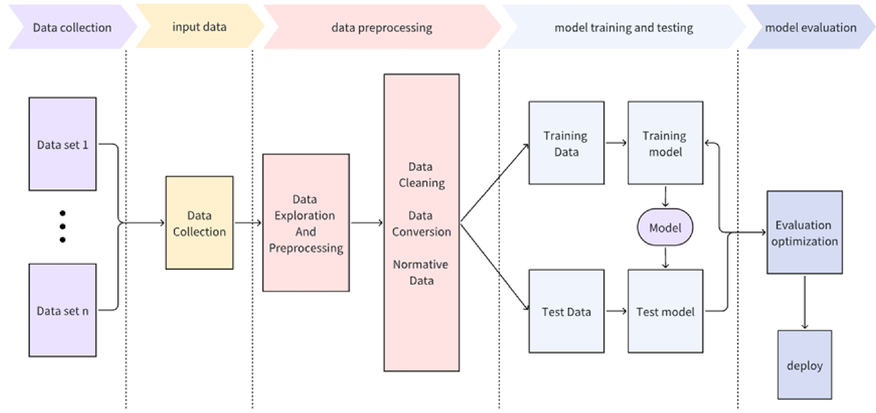

## WHERE MACHINE LEARNING USED?

AlphaGo: beat the best human Go player



Autonomous Vehicles: intelligent vehicle navigation and decision making.

## GENERAL PROCESS OF MACHINE LEARNING




- **Data collection: Brain food for robots**
- **Data Input: Learning for Robots**
- **Data preprocessing: Knowledge classification**
- **Model training and testing: Allow robots to learn and take exams to test learning performance**
- **Model Evaluation: Check their homework and give them rewards and punishments.**
- **Deployment: Robots become super smart after finishing their studies and can help you with your tasks!**

## AN INTERESTING PROBLEM "PASTOR AND VILLAGERS" SOLVED BY MACHINE LEARNING ALGORITHM

Imagine a large meadow dotted with several small villages, where each village is home to many villagers. Now, we want to designate a few locations to build churches so that villagers can reach them most conveniently.

**step 1**

First, we randomly select a few locations to establish our initial churches. These church locations might not be optimal at the start, but we will optimize their positions through a series of iterations.

**step 2**

Next, each villager is assigned to the nearest church for worship.

**step 3**

After observing the distribution of villagers, the pastors decide that they might need to move the locations of the churches so that each church is at the center of its serving villagers. Each church will re-determine its position based on the locations of its villagers.

**step 4**

This process is repeated: villagers choose their nearest church based on the new locations of the churches, and then the pastors adjust the locations of the churches again based on the new distribution of villagers.

**step 5**

When the locations of the churches no longer change, or the changes are minimal, church serves a specific group of villages, and every villager attends the nearest church.

## TARGET AUDIENCE

**High school students aged 16~18 who are interested in machine learning knowledge. Join us ! ! !**