



# CS 103 -04

## AI Algorithm Introduction

Jimmy Liu 刘江

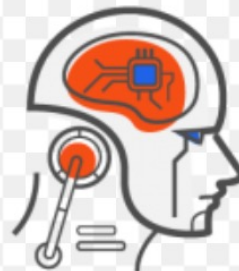
2022-09-30

# AI and US - Future of AI?



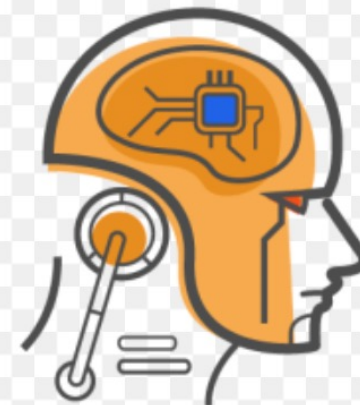
## Narrow AI

Dedicated to assist with or take over specific tasks.



## General AI

Takes knowledge from one domain, transfers to other domain.



## Super AI

Machines that are an order of magnitude smarter than humans.

# AI Algorithm Summary

## ARTIFICIAL INTELLIGENCE

Early artificial intelligence stirs excitement.



## MACHINE LEARNING

Machine learning begins to flourish.



## DEEP LEARNING

Deep learning breakthroughs drive AI boom.



1950's

1960's

1970's

1980's

1990's

2000's

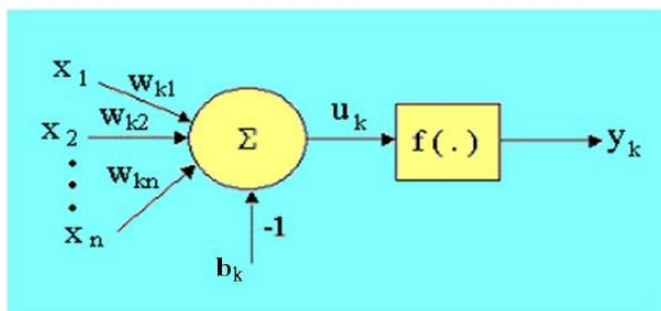
2010's

Since an early flush of optimism in the 1950's, smaller subsets of artificial intelligence - first machine learning, then deep learning, a subset of machine learning - have created ever larger disruptions.

# Early AI Algorithms

## 感知器 (Perceptron)

1958年, (美)F.Rosenblatt提出, 适于简单的模式分类问题。



输入:  $x_1, x_2, \dots, x_n$

权:  $w_{k1}, w_{k2}, \dots, w_{kn}$

输出:  $y_k$

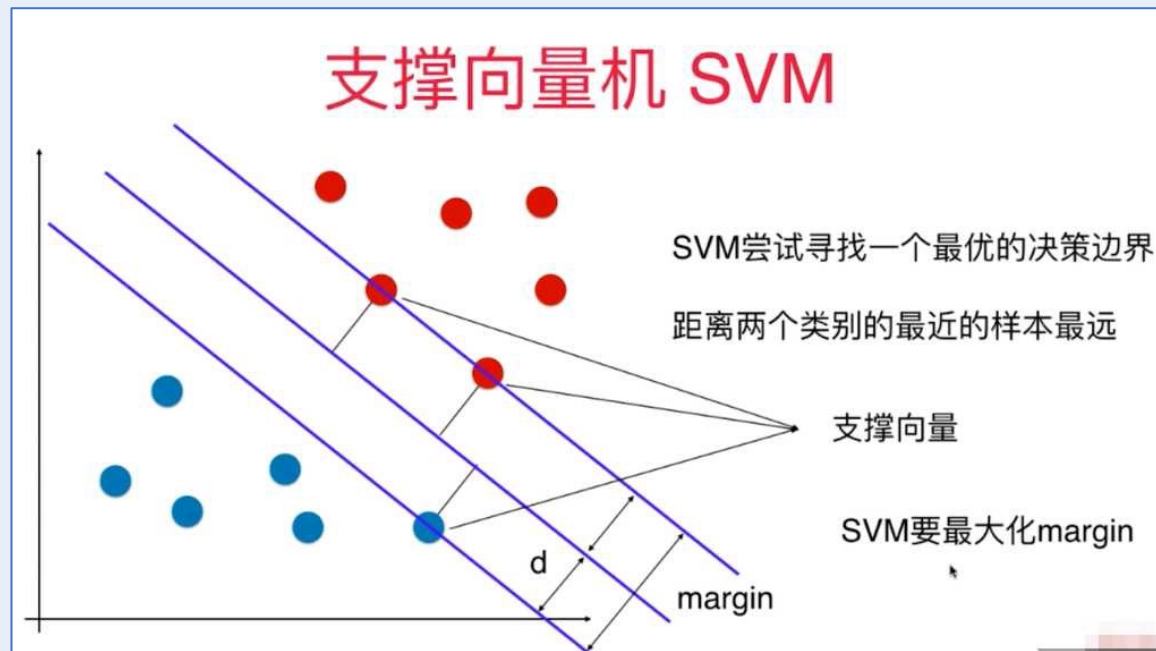
阈值:  $b_k$  (函数 $f$ 的阈值)



# Machine Learning Algorithms

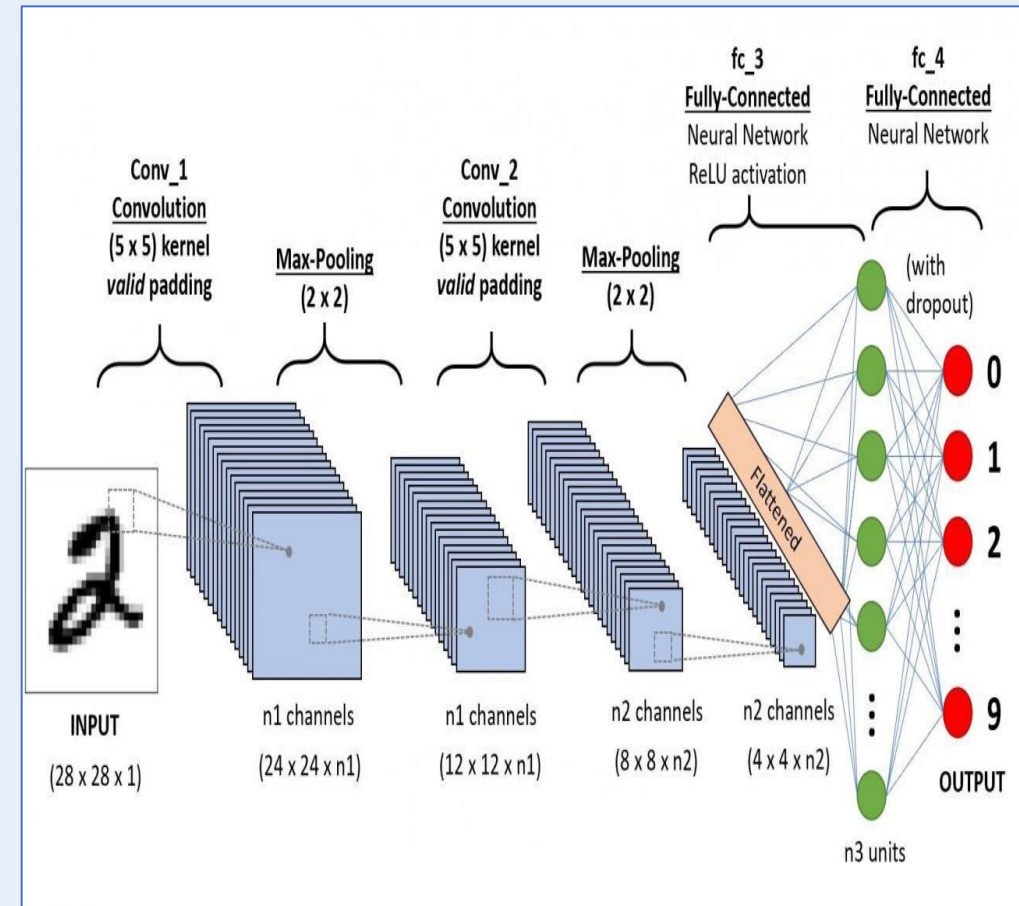
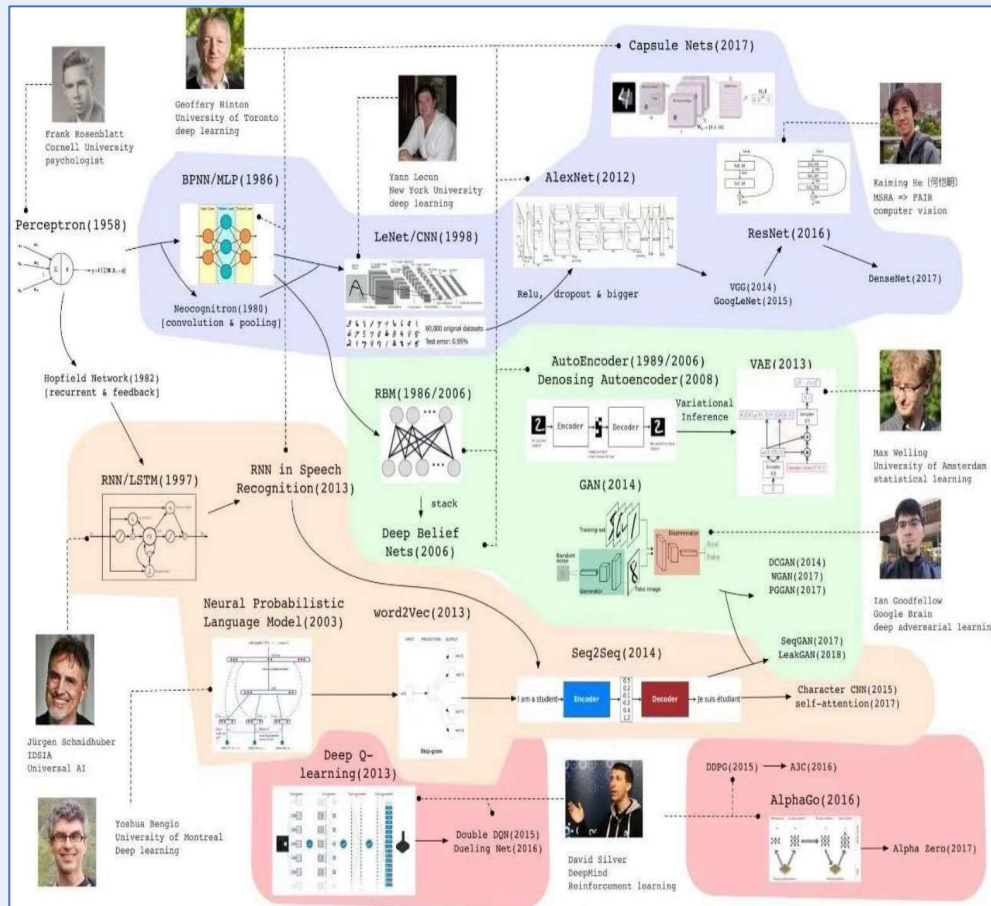
## 机器学习十大经典算法

1. C4.5
2. 分类与回归树
3. 朴素贝叶斯
4. 支持向量机 (SVM)
5. K近邻 (KNN)
6. AdaBoost
7. K均值 (K-means)
8. 最大期望 (EM)
9. Apriori算法
10. Pagerank



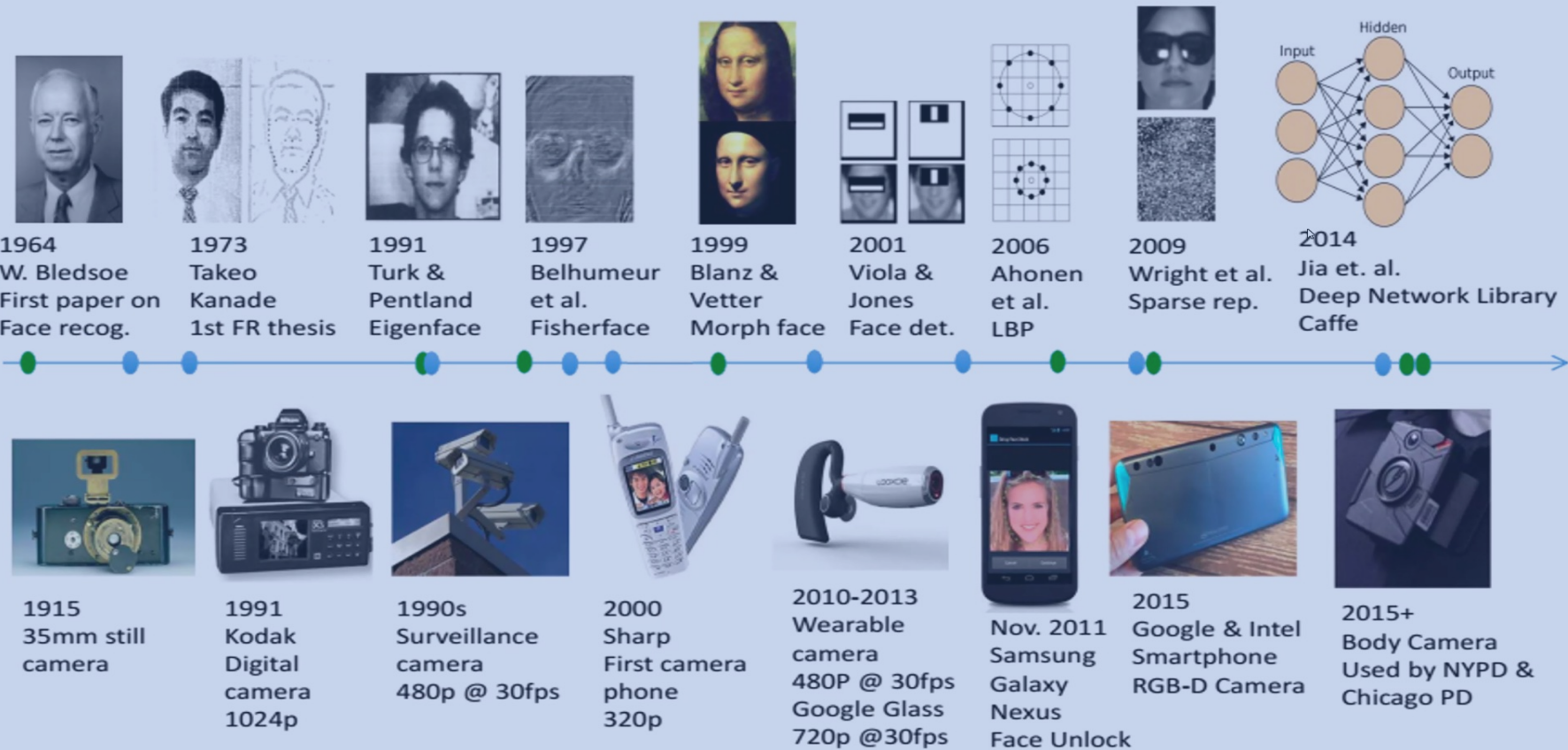


# Deep Learning Algorithms



# AI+ Face Recognition

## Face Recognition Milestones



By courtesy of Prof. Anil K. Jain, MSU

# Homework 04

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1

Have the First Meeting among Your Project Members,  
Send a Snapshot of Your Meeting (Optional) to the  
Class Wechat Group





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