

Preface

ML algorithms are all around us.

five tribes of machine learning -

1. Symbolists

- view learning as inverse of deductions and takes ideas from philosophy, psychology and logic.

M·A — Inverse Deduction

2. Connectionists

- reverse engineer the brain and are inspired by neuroscience and physics

M A - Backpropagation

3. Evolutionaries

- simulation evolution and draw genetics and evolutionary biology.

MA. Genetic programming

4. Bayesians

- believe learning is a form of probabilistic inference and have their roots in statistics. M.A - Bayesian Inference

Statistics : M.A - Bayesian Inference

5. Analogizers

- learn by extrapolating similarity judgements, influenced by psychology and mathematical optimization. M.A. Support Vector Machines.

Master Algorithm - general purpose learner combining key features of all above -

Chapter 1 - The machine learning Revolution.

Algorithms have become the fabric of every system and it would be the end of the world if they stop.

Algorithm - Sequence of instructions telling the computer what to do.

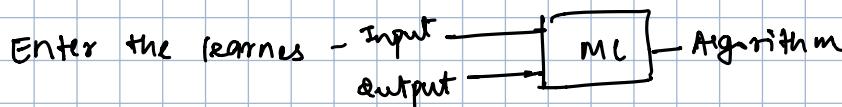
Computers → Transistors → flip / combine bits = algorithm.

Every algorithm no matter how complex can be written in AND, OR, NOT.
= logical reasoning.

Algorithm = precise, unambiguous, should always produce same result.

Algorithm , written in a language that a computer can understand, becomes a program . Programmers are like mini gods , creating universes one algorithm at a time .

complexity monster = time, space and human complexity.



Rajid Ghani, Obama's campaign chief scientist

