

# Intro to pymc:-

## Probabilistic Programming

- Way to write Bayesian models in code
- Lets user define probabilistic models & run Bayesian Models without deriving equations.

## What is PyMC?

- An open source probabilistic programming framework in python.
- Allows users to specify Bayesian models without using simple python code.
- Makes Bayesian modeling easier, more flexible, etc.

## Why is PYMC Powerful?

### 1) Modern MCMC Algorithms

- Uses Hamiltonian Monte Carlo (HMC) and its Improved version

NUTS (No-U-Turn Sampler)

- i) Tune themselves automatically
- ii) Work well with High dimensional, complex posteriors.

### 2) Automatic Gradient via Pytensor

- Use Pytensor for:-
  - Automatic differentiation