

Cloud Computing

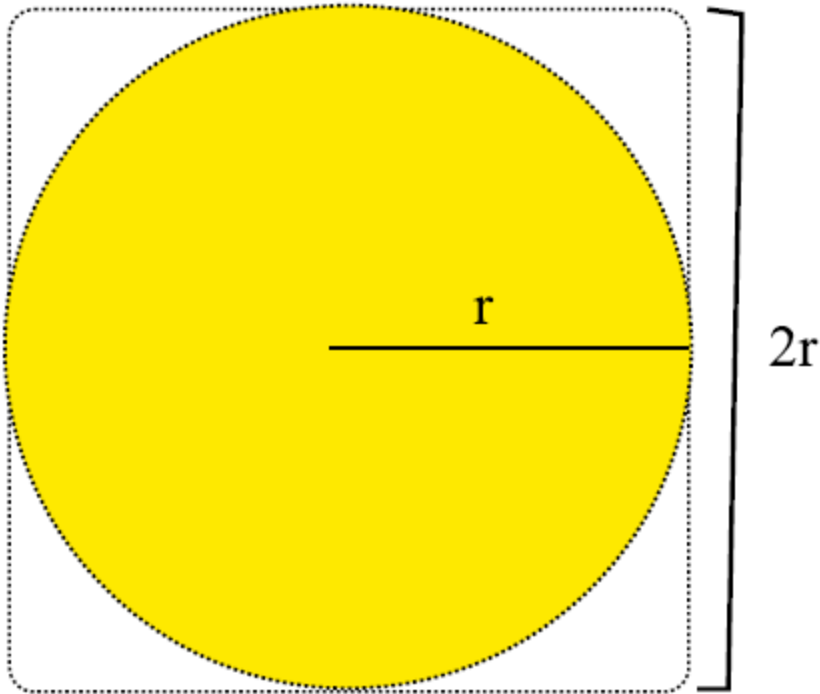
# **Distributed Monte Carlo**

**Dell Zhang**

Birkbeck, University of London

2018/19

# Computing Pi



$$A_s = (2r)^2 = 4r^2$$

$$A_c = \pi \times r^2$$



$$\pi = 4 \times \frac{A_c}{A_s}$$

# Computing Pi

- Mapper
  - Generate points in a unit square
  - Count points inside/outside of the inscribed circle of the square
- Reducer
  - Accumulate points inside/outside results from the mappers

# Computing Pi

- Java Code

- <http://goo.gl/FnJpKO>

- Related Articles

- [http://en.wikipedia.org/wiki/Quasi-Monte Carlo method](http://en.wikipedia.org/wiki/Quasi-Monte_Carlo_method)

- [http://en.wikipedia.org/wiki/Halton sequence](http://en.wikipedia.org/wiki/Halton_sequence)