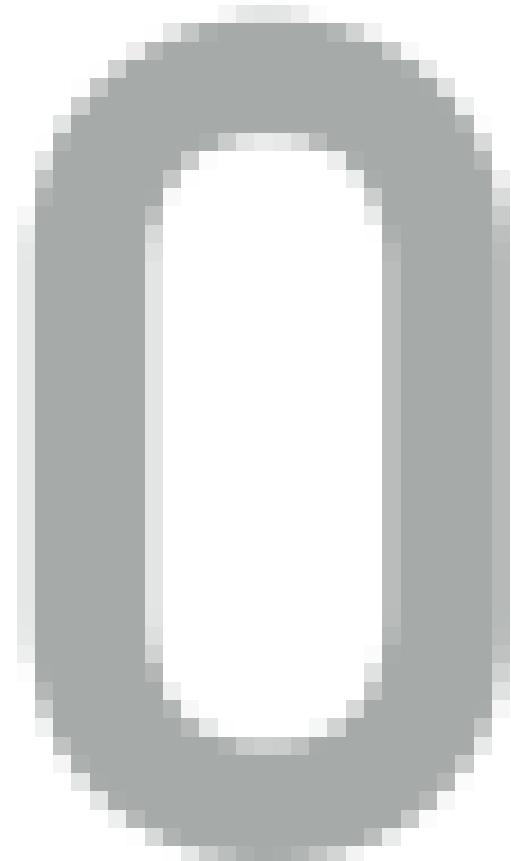
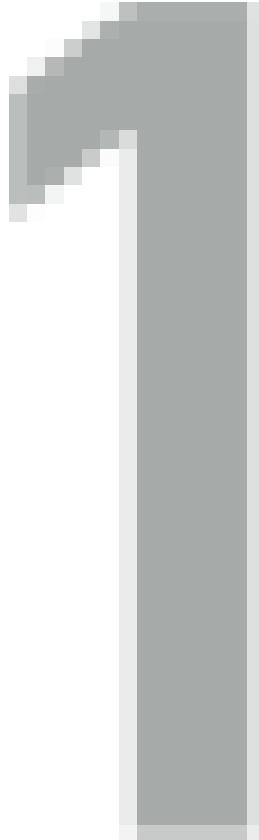


SAFETY
CAMPPIA
PLAYING.
POINTA
NG.



- The target π is a Boltzmann-Gibbs distribution

$$\pi(x) = \frac{\exp(-\beta U(x))}{Z(\beta)}$$

- $U: \mathbb{X} \rightarrow \mathbb{R}$ is the potential energy, encoding the physics of a system

$$\gamma(x) = \exp(-\beta U(x))$$

- ▶ Normalising constant is the partition function

$$Z(\beta) = \int_{\mathcal{X}} \exp(-\beta U(x)) dx$$

→ rigidity of mechanical systems from statistical mechanics

► β is the inverse-temperature of a system

→ We will explore a space between density and log-space

SAMPLING: POTENTIALS

- ▶ Original formulation of sampling problem came from statistical mechanics
- ▶ The target π is a Boltzmann-Gibbs distribution

$$\pi(x) = \frac{\exp(-\beta U(x))}{Z(\beta)}$$

- ▶ $U : \mathbb{X} \rightarrow \mathbb{R}$ is the potential energy, encoding the physics of a system

$$\gamma(x) = \exp(-\beta U(x))$$

- ▶ β is the inverse-temperature of a system
- ▶ Normalising constant is the partition function

$$Z(\beta) = \int_{\mathbb{X}} \exp(-\beta U(x)) dx$$

- ▶ We will often interpolate between density and log-space

GOALS