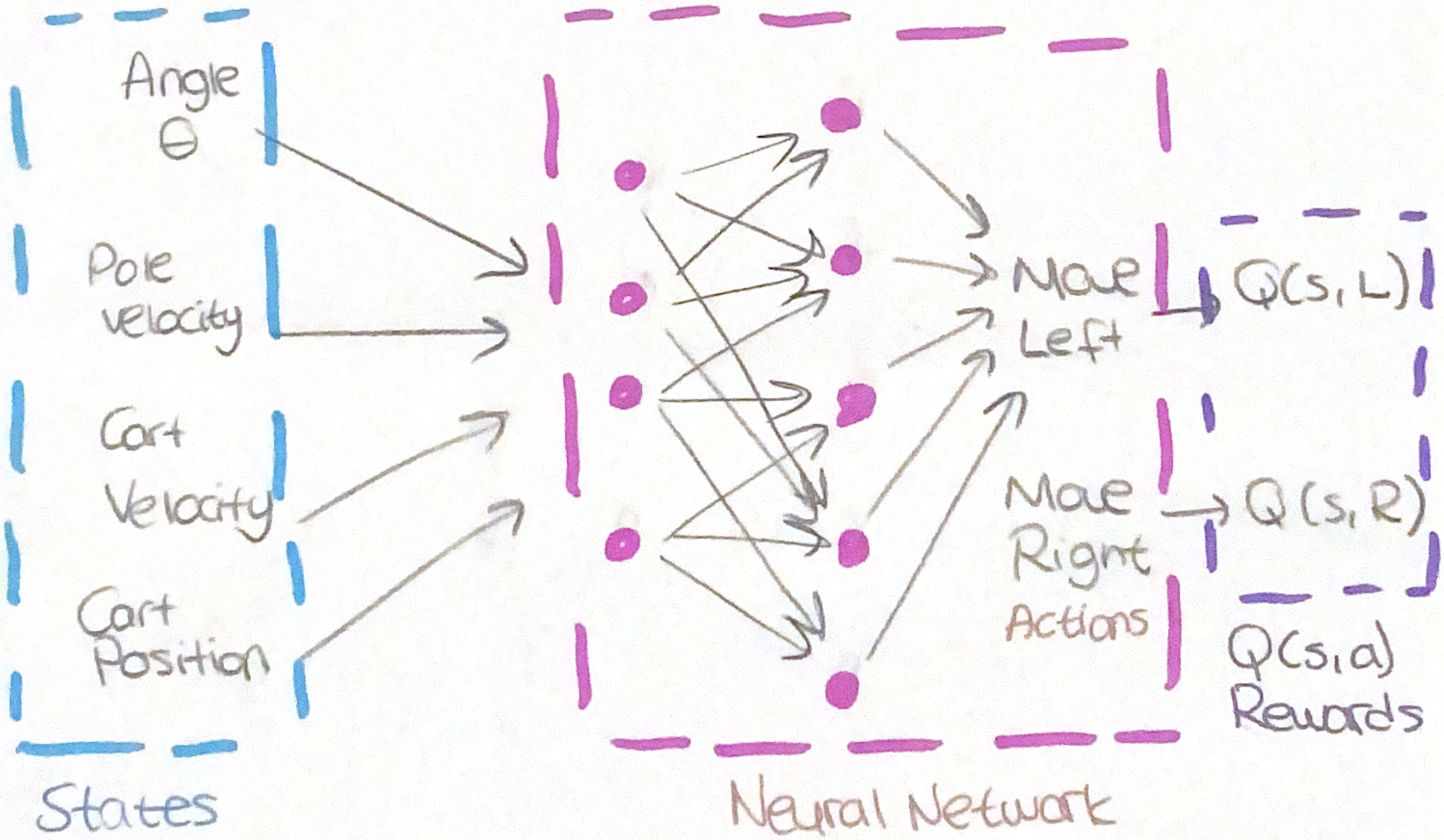
# Cartpole Example

- Actions → move L & move R (discrete)
- State space → $(\theta, \dot{\theta}, x, \dot{x}2)$ (continuous)
  - ↳ we must shift state in every slight change in angle, not feasible to hold in Q-table

## Deep Q-Network ← Approximate Q(s,a)




★ It is essential to have a loss function that minimizes error between approximation and true Q(s,a) calculated from equation

$$(S, A, R, P, \rho)$$

- S → state
- A → action
- R → reward
- P → transition probs
- ρ → initial state distribution