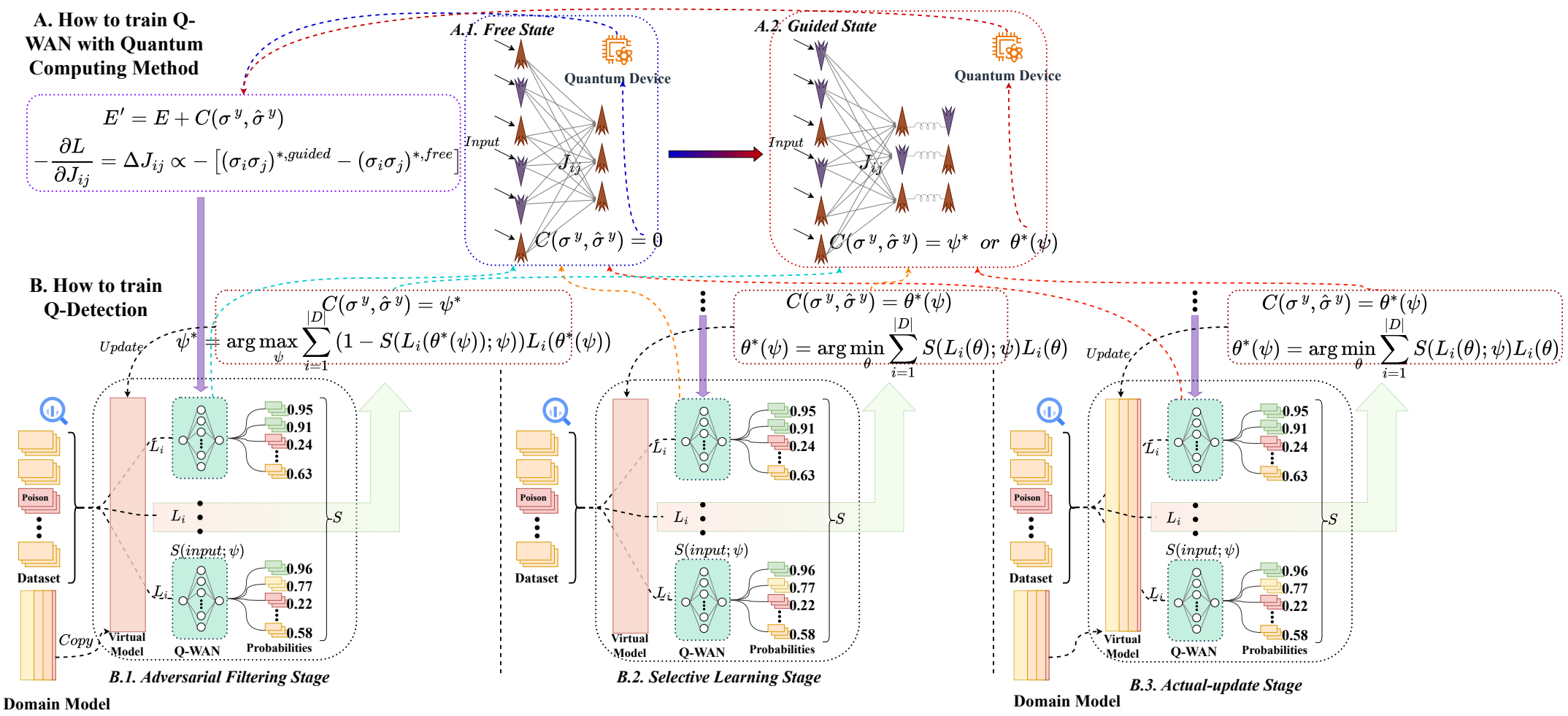
A. How to train Q-WAN with Quantum Computing Method
$E' = E + C(\sigma^y, \hat{\sigma}^y)$
$-\frac{\partial L}{\partial J_{ij}} = \Delta J_{ij} \propto -\left[(\sigma_i\sigma_j)^{*,guided} - (\sigma_i\sigma_j)^{*,free}\right]$
A.1. Free State
Quantum Device
Input
J_{ij}
$C(\sigma^y, \hat{\sigma}^y) = 0$
A.2. Guided State
Quantum Device
Input
J_{ij}
$C(\sigma^y, \hat{\sigma}^y) = \psi^*$ or $\theta^*(\psi)$
B. How to train Q-Detection
$C(\sigma^y, \hat{\sigma}^y) = \psi^*$
$\psi^* = \arg\max_{\psi} \sum_{i=1}^{|D|} (1 - S(L_i(\theta^*(\psi)); \psi))L_i(\theta^*(\psi))$
$C(\sigma^y, \hat{\sigma}^y) = \theta^*(\psi)$
$\theta^*(\psi) = \arg\min_{\theta} \sum_{i=1}^{|D|} S(L_i(\theta); \psi)L_i(\theta)$
$C(\sigma^y, \hat{\sigma}^y) = \theta^*(\psi)$
$\theta^*(\psi) = \arg\min_{\theta} \sum_{i=1}^{|D|} S(L_i(\theta); \psi)L_i(\theta)$
Update
Update
Poison
Dataset
Copy
Virtual Model
L_i
Q-WAN
$S(input; \psi)$
S
0.95
0.91
0.24
0.63
0.96
0.77
0.22
0.58
Probabilities
B.1. Adversarial Filtering Stage
B.2. Selective Learning Stage
B.3. Actual-update Stage
Domain Model
Domain Model