

**SERVER**

**FedAvg with server momentum**

$$\Delta w = \sum_{k=1}^K \left( \frac{n_k}{n} \right) (w_t - w_t^k)$$

$$v_{t+1} = \beta v_t + (1 - \beta) \Delta w$$

$$w_{t+1} = w_t - \eta v_{t+1}$$

**FedAvg (when  $\beta = 0$  &  $\eta = 1$ )**

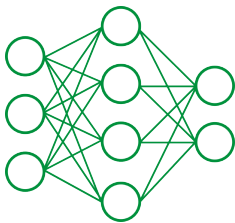
Federated  
Model Parameters

$\Delta w^1$

Federated  
Model Parameters

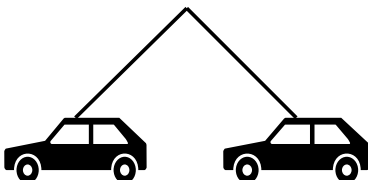
$\Delta w^K$

**Client 1**

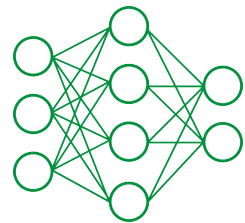


FCNN

EVCS



**Client K**



FCNN

EVCS

