List of parameters

F	3 dimensional flow matrix
$f_{i,j,k}$	Flow on day i, time slot j and location k
A, A_{ref}	Temporary matrix used for correlation analysis
$nLoc$	Number of locations where charging stations are located.
$l \in \{1, 2, ...L\}$	Layers of neural network where L are the total number of layers
x_i, y_i	i_{th} instance of input and known output vector
$w_{j,i}^l$	Weight between j_{th} neuron in layer l and i_{th} neuron in layer $l-1$
net_j^l	Net input to j_{th} neuron in layer l
o_i^{l-1}	Output of i_{th} neuron in layer $l-1$
f	Activation function
E	Error value
$\Delta w_{j,i}^l$	Incremental change in weight
η	Learning rate
p, q, r	Coordinates of flow matrix where traffic need to be predicted
l, n	Historical l and n time slots
m	Spatial locations
s	Historical weeks
I, Y	Input and target output matrix
IO	Number of elements in input or target output matrix
$iter$	Number of iterations
n_h^l	Number of neurons in hidden layer l

Table 1: Parameters for prediction unit

i	PEV charging request i
N	Number of charging requests
CS_j	Charging station j
m	Number of charging stations
l_j^c	Location of j_{th} charging station
r_j^c	Charging rate of EVSE at charging station j
R_i	Information set of i_{th} PEV charging request
t_i	Time at which request i is generated
l_i	Location of PEV i when request is made
γ_i	Direction of travel for for PEV with request i
s_i^{avg}	Average speed of PEV with request i
$SOC_i^{curr},\ SOC_i^{min},\ SOC_i^{req}$	Current, minimum, and required status of charge for PEV with request i
r_i^{dc}	Rate of battery discharge of PEV i
d_i^{max}	Maximum distance a PEV can travel with current status of charge
τ	Optimization interval length
τ_n	Time slot at which PEV reaches j_{th} charging station
$t_{j,n}^w$	Wait time at j_{th} charging station at time slot n
$T_{i,j}$	Travel and effective charging time for PEV with request i at charging station j
$y_{j,n},\ \hat{y_{j,n}}$	Actual and predicted traffic at charging station j for time slot τ_n
Γ	Arbitrarily chosen constant
M_i	Set of potential charging stations for PEV with request i
M	Tuple containing every M_i
$t_i^c(k)$	Effective charging time of i_{th} request in k_{th} element of M_i
S_i	Assigned station to PEV with request i
S	Set of assigned stations
$CS_b,\ R_a$	Assigned station and request (Temporary parameter variable used in algorithm 3)
$k,\ l$	Index variables used in algorithm 2
P	Temporary variable

Table 2: Parameters for optimization unit