

LIST OF FIGURES

1.1	Reseach methodology	7
2.1	Device-to-Device communication system.	8
2.2	D2D inband communication vs D2D outband communication.	9
2.3	Conventional CNN architecture.	12
2.4	Convoltuion operation.	13
2.5	Spatial Pyramid Pooling	13
2.6	Fully connected layer.	14
2.7	Operation in single node.	15
3.1	18
3.2	System model	19
3.3	Interference in BS	21
3.4	Interference in D2DRX	22
3.5	Research flow.	24
3.6	Dataset structure.	32
3.7	proposed CNN architecture.	33
3.8	Input matrix of CNN.	34
3.9	Zero padding for training model.	35
3.10	Training and testing models	36
4.1	The process of CNN and CNN-SPP.	41
4.2	Average system's data rate.	42
4.3	Average system's data rate.	43
4.4	Average system's energy efficiency.	44
4.5	Average system's energy efficiency.	45
4.6	Time consumption	46
4.7	Mean square error	47
4.8	Time complexity of CNN and CNN-SPP.	49