Daftar Gambar

2.1 Mask R-CNN 22
2.2 Fast R-CNN 23
2.3 Faster R-CNN 24
2.4 Arduino 24
2.5 Sensor PIR 25
2.6 Kamera OV7670 26

3.1 Diagram Alir Riset Penelitian 28
3.2 Diagram Alir Metodologi Objek Deteksi 30
3.3 Diagram Alir Metodologi rangkaian prototype 31
3.4 Diagram Alir Metodologi Objektif Ketiga 33
3.5 Gambar yang sudah di annotasi 35
3.6 Alur Gambar Data test 35
3.7 Arsitektur Perangkat Deteksi Hama 37

4.1 Split data 40
4.2 Sebelum di Augmentasi 40
4.3 Sudah di Augmentasi 40
4.4 Loss Mask - RCNN Learning Rate 0.0001 41
4.5 Loss Mask - RCNN Learning Rate 0.01 41
4.6 Loss Faster - RCNN Learning Rate 0.0001 42
4.7 Loss Faster - RCNN Learning Rate 0.01 42
4.8 Loss Fast - RCNN Learning Rate 0.0001 43
4.9 Loss Fast - RCNN Learning Rate 0.01 43
4.10 ArduiImageCapture 44
4.11 Rangkaian Prototype 45
4.12 Hasil Tangkapan Kamera 45
4.13 Hasil deteksi objek 48
4.14 Hasil deteksi objek 48
4.15 Hasil MQTT 49