

## DAFTAR GAMBAR

Gambar 3.1 Gambaran umum solusi 1.....	10
Gambar 3.2 Gambaran umum solusi 2.....	11
Gambar 3.3 Gambaran umum solusi 3.....	11
Gambar 3.4 Arsitektur CNN .....	13
Gambar 3.5 Max pooling dan average pooling.....	14
Gambar 3.6 Struktur jaringan YOLOv8 .....	15
Gambar 3.7 Representasi IoU .....	17
Gambar 3.8 Ilustrasi perbandingan objek .....	18
Gambar 3.9 Diagram blok sistem.....	19
Gambar 3.10 Flowchart diagram sistem .....	20
Gambar 3.11 Use case diagram sistem .....	20
Gambar 3.12 Diagram sequence sistem.....	21
Gambar 3.13 Diagram sistem secara keseluruhan .....	22
Gambar 4.1 Contoh data yang digunakan .....	25
Gambar 4.2 Contoh proses preprocessing.....	26
Gambar 4.3 Proses anotasi dataset .....	27
Gambar 4.4 Implementasi object detection.....	28
Gambar 4.5 Pengukuran perbandingan.....	28
Gambar 4.6 Ilustrasi pengukuran tinggi.....	29
Gambar 4.7 Hasil akhir pendeteksian .....	31
Gambar 4.8 Hasil implementasi website .....	31
Gambar 5.1 Grafik nilai performance partisi 1.....	35
Gambar 5.2 Grafik nilai performance partisi 2.....	36
Gambar 5.3 Grafik nilai performance partisi 3.....	37
Gambar 5.4 Grafik nilai performance partisi 4.....	38
Gambar 5.5 Grafik nilai performance batch size 4 .....	39
Gambar 5.6 Grafik nilai performance batch size 8 .....	40
Gambar 5.7 Grafik nilai performance batch size 16.....	41
Gambar 5.8 Grafik nilai performance batch size 32 .....	42
Gambar 5.9 Grafik nilai performance batch size 64 .....	43
Gambar 5.10 Grafik nilai performance learning rate 0.01.....	44
Gambar 5.11 Grafik nilai performance learning rate 0.001.....	45

<b>Gambar 5.12 Grafik nilai performance learning rate 0.0001.....</b>	<b>46</b>
<b>Gambar 5.13 Grafik nilai performance learning rate 0.00001.....</b>	<b>47</b>
<b>Gambar 5.14 Grafik nilai performance epoch 50.....</b>	<b>48</b>
<b>Gambar 5.15 Grafik nilai performance epoch 100.....</b>	<b>49</b>
<b>Gambar 5.16 Grafik nilai performance epoch 150.....</b>	<b>50</b>
<b>Gambar 5.17 Grafik nilai performance epoch 200.....</b>	<b>51</b>
<b>Gambar 5.18 Ilustrasi proses pengujian jarak dan ketinggian drone.....</b>	<b>53</b>
<b>Gambar 5.19 Hasil aplikasi lux meter .....</b>	<b>56</b>
<b>Gambar 5.20 Grafik perbandingan analisis pengujian partisi .....</b>	<b>62</b>
<b>Gambar 5.21 Grafik analisis pengujian batch size.....</b>	<b>63</b>
<b>Gambar 5.22 Grafik analisis pengujian learning rate .....</b>	<b>63</b>
<b>Gambar 5.23 Grafik analisis pengujian epoch.....</b>	<b>64</b>
<b>Gambar 5.24 Grafik performance model terbaik .....</b>	<b>65</b>
<b>Gambar 5.25 Confusion matrix.....</b>	<b>65</b>
<b>Gambar 5.26 Grafik rata-rata akurasi.....</b>	<b>67</b>
<b>Gambar 5.27 Grafik rata-rata error.....</b>	<b>67</b>
<b>Gambar 5.28 Analisis pengujian beta.....</b>	<b>71</b>