

## DAFTAR ISI

|  |      |
|--|------|
| LEMBAR PENGESAHAN TUGAS AKHIR.....               | ii   |
| LEMBAR PERNYATAAN ORISINALITAS .....             | iii  |
| ABSTRAK .....                                    | iv   |
| <i>ABSTRACT</i> .....                            | v    |
| KATA PENGANTAR.....                              | vi   |
| DAFTAR ISI.....                                  | ix   |
| DAFTAR TABEL .....                               | xii  |
| DAFTAR GAMBAR.....                               | xiii |
| DAFTAR RUMUS .....                               | xv   |
| DAFTAR ISTILAH .....                             | xvi  |
| DAFTAR LAMPIRAN.....                             | xvii |
| BAB I PENDAHULUAN.....                           | 18   |
| 1.1. Latar Belakang Masalah.....                 | 18   |
| 1.2. Rumusan Masalah .....                       | 20   |
| 1.3. Tujuan Penelitian .....                     | 20   |
| 1.4. Batasan Masalah dan Asumsi Penelitian ..... | 20   |
| 1.5. Manfaat Penelitian .....                    | 21   |
| 1.6. Sistematika Penulisan .....                 | 22   |
| BAB II TINJAUAN PUSTAKA.....                     | 24   |
| 2.1. Penelitian Terkait .....                    | 24   |
| 2.2. Jamur.....                                  | 26   |
| 2.3. <i>Deep learning</i> .....                  | 32   |
| 2.4. <i>Convolutional Neural Network</i> .....   | 33   |
| 2.4.1. <i>Convolutional Layer</i> .....          | 34   |
| 2.4.2. <i>Rectified Linear Unit (ReLU)</i> ..... | 35   |
| 2.4.3. <i>Pooling Layer</i> .....                | 35   |
| 2.4.4. <i>Flatten Layer</i> .....                | 36   |
| 2.4.5. <i>Fully Connected Layer</i> .....        | 37   |
| 2.4.6. <i>Sigmoid</i> .....                      | 37   |
| 2.5. <i>Loss Function</i> .....                  | 38   |
| 2.6. <i>Confusion matrix</i> .....               | 38   |

|   |  |           |
|---|--|-----------|
| 2.6.1.  | <i>Accuracy</i> .....                                  | 39        |
| 2.6.2.  | <i>Precision</i> .....                                 | 39        |
| 2.6.3.  | <i>Recall</i> .....                                    | 39        |
| 2.6.4.  | <i>F1 - Score</i> .....                                | 39        |
| 2.7.  | <i>EfficientNetV2</i> .....                            | 40        |
| <b>BAB III METODOLOGI PENELITIAN</b> .....          |  | <b>43</b> |
| 3.1.  | <b>Desain Sistem</b> .....                             | <b>43</b> |
| 3.1.1.  | <b>Dataset</b> .....                                   | <b>45</b> |
| 3.1.2.  | <i>Pre-Processing</i> .....                            | <b>46</b> |
| 3.1.3.  | <b>Arsitektur Sistem</b> .....                         | <b>46</b> |
| 3.2.  | <b>Parameter Pengujian</b> .....                       | <b>47</b> |
| 3.3.  | <b>Pengujian Sistem</b> .....                          | <b>47</b> |
| 3.3.1.  | <i>Optimizer</i> .....                                 | <b>49</b> |
| 3.3.2.  | <i>Learning rate</i> .....                             | <b>49</b> |
| 3.3.3.  | <i>Batch size</i> .....                                | <b>49</b> |
| 3.3.4.  | <i>Epoch</i> .....                                     | <b>50</b> |
| 3.4.  | <b>Evaluasi Sistem</b> .....                           | <b>50</b> |
| <b>BAB IV PENGUMPULAN DAN PENGOLAHAN DATA</b> ..... |  | <b>51</b> |
| 4.1   | <i>Tuning hyperparameter</i> .....                     | <b>51</b> |
| 4.1.1   | <i>Tuning hyperparameter Learning rate</i> .....       | <b>51</b> |
| 4.1.2   | <i>Tuning hyperparameter Batch size</i> .....          | <b>52</b> |
| 4.1.3   | <i>Tuning hyperparameter Epoch</i> .....               | <b>54</b> |
| 4.3.  | <b>Pengujian Cross Validation</b> .....                | <b>56</b> |
| <b>BAB V ANALISIS DAN PEMBAHASAN</b> .....          |  | <b>58</b> |
| 5.1.  | <b>Pemilihan Hyperparameter Terbaik</b> .....          | <b>58</b> |
| 5.1.1.  | <i>Learning Rate</i> .....                             | <b>58</b> |
| 5.1.2.  | <i>Batch Size</i> .....                                | <b>59</b> |
| 5.1.3.  | <i>Epoch</i> .....                                     | <b>60</b> |
| 5.1.4.  | <b>Kombinasi Parameter Terbaik</b> .....               | <b>60</b> |
| 5.1.5.  | <i>Confusion Matrix</i> .....                          | <b>61</b> |
| 5.2.  | <i>Cross Validation</i> .....                          | <b>62</b> |
| 5.3.  | <b>Perbandingan dengan Penelitian Sebelumnya</b> ..... | <b>64</b> |
| <b>BAB VI KESIMPULAN DAN SARAN</b> .....            |  | <b>66</b> |

**DAFTAR PUSTAKA..... 68**  
**LAMPIRAN..... 73**