Worm Classification Training Report

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| Visual Verification of Input Data | [Place any notes on visually checking the images here] |
| Training/Validation/Testing Splits | Train size: 8800, Test size: 2200 (20% test) |
| Input Image Size | Same as original or after any resizing (none in this code). |
| Image Preprocessing | CLAHE (clipLimit=2.0, tileGridSize=(8,8)) Median blur (3x3) Canny edges blended with original (0.8 / 0.2) |
| Logistic Regression Parameters | SGDClassifier(loss='log\_loss', penalty='l2', max\_iter=1, warm\_start=True, random\_state=42) |
| Optimizer Type & Params | Stochastic Gradient Descent with partial\_fit Learning rate = default, no explicit schedule max\_epochs = 100 |
| Confusion Matrix | [[975 125]  [157 943]] |
| Execution Times | Training time: 6.44 sec |
| Classification Report | precision recall f1-score support   0 0.8613 0.8864 0.8737 1100  1 0.8830 0.8573 0.8699 1100   accuracy 0.8718 2200  macro avg 0.8721 0.8718 0.8718 2200 weighted avg 0.8721 0.8718 0.8718 2200 |
| Test Accuracy | 0.8718 |
| Feature Summary (Optional) | Feature dimension before PCA: 5818 After PCA: 1432 Mean of first feature in training set: 0.1865 ... |