

Intensity Correction and Standardization for Electron Microscopy Data

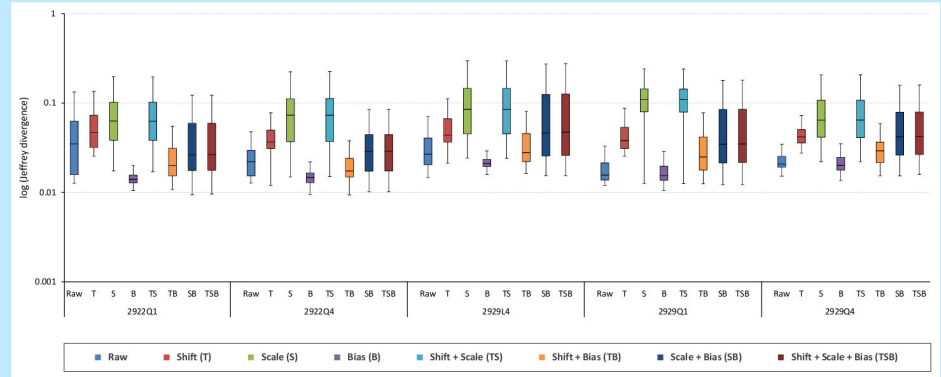
Introduction

- Mitochondria segmentation from highly heterogeneous Transmission Electron Microscopy (TEM) data
- Five annotated sets of TEM data
- Trained using Res-Net-based architecture on U-Net backbone
- Measures: Jeffrey divergence (bias), Jaccard index (segmentation)



Intra-Set Intensity Correction

- Efficient algorithm for estimation of field inhomogeneity (bias)



Intra- and Inter-Set Intensity Standardization

- Bias correction (B) improves segmentation results
- Histogram equalization (H) vs Exact histogram specification (M)
- Best performance: M, B + M

