

# Summary of Revisions from Initial Submission to Camera-Ready Version for "NFCMTL: Auto NailFold Capillaroscopy through a Multi-Task Learning Model"

Based on reviewer feedback, the following key revisions were made:

## 1. Expanded Baseline Comparisons:

- **Initial Version:** Included limited baseline methods for comparison.
- **Camera-Ready Version:**
  - Additional baselines such as CAPI and Mask-RCNN have been incorporated, providing comprehensive comparative results.
  - Implemented experiments on datasets with various augmentation to meet different light conditions etc.

## 2. Clarification and Justification of Model Architecture Choices:

- **Initial Version:** Did not clearly justify the use of Mask R-CNN heads and uncertainty weighting.
- **Camera-Ready Version:**
  - Clearly articulated the necessity of Mask R-CNN due to the distinct nature of segmentation, classification, and keypoint detection tasks.
  - Provided explicit justification for employing uncertainty weighting (UW), referencing Kendall et al. to explain its effectiveness in balancing multi-task loss contributions.
  - Included extended ablation studies to validate the choice of UW over equal and manual weighting schemes, demonstrating significant performance improvements in the OpenReview rebuttals.

## 3. Enhanced Experimental Robustness:

- **Initial Version:** Limited discussion on dataset augmentation and generalization.
- **Camera-Ready Version:**

- Augmented datasets with photometric transformations (random brightness, contrast, hue shifts) to better mimic real-world clinical variability.
- Clearly outlined the training-test subject-level split methodology (five-folds) to ensure robust evaluation and generalization.

#### **4. Detailed Evaluation Metrics and Clarifications:**

- **Initial Version:** Evaluation metrics were limited and occasionally unclear.

- **Camera-Ready Version:**

- Corrected directional indicators for metrics (e.g., arrows for Mean Absolute Error).
- Expanded evaluation tables, including confusion matrices, detailed fold-by-fold analysis in OpenReview comments.

#### **5. Improved Clarity and Presentation:**

- **Initial Version:** Figures and tables had clarity and readability issues.

- **Camera-Ready Version:**

- Revised figure placement and provided more informative captions.
- Ensured tables were consistently positioned and clearly labeled for improved readability.