**Review Paper - Performance Analysis**

**1. Hand Segmentation In Complex Background Using UNet - IEEE**

Yes, the provided text provides information about the performance metrics and evaluation of various hand segmentation models on two datasets: Egohands dataset and GTEA dataset. The text presents a table (TABLE I) that shows the results of hand segmentation in the Egohands dataset, including metrics such as accuracy, precision, recall, F1 score, Kappa, and Intersection over Union (IOU). The metrics are calculated for different segmentation models, including fcn8, fcn8 vgg, segnet, segnet vgg, and UNet.

Similarly, the discussion section mentions the performance matrices on the test set for the GTEA dataset, although the specific metrics are not detailed in the provided excerpt.

The text discusses the comparison of results with other models and emphasizes the promising results of using the UNet model for hand segmentation in non-constraint conditions. It mentions that FCN8 and FCN8 VGG achieved good performance on the mean IOU semantic segmentation metric in hand segmentation.

Furthermore, the discussion contrasts the UNet model with FCN (Fully Convolutional Network) architecture, highlighting differences such as the use of learnable weight filters in UNet, the presence of skip connections, and the number of upsampling layers. It also mentions that Segnet's performance metrics are much lower than FCN due to its decoder architecture and lower memory requirements.

In summary, the text provides insights into the performance metrics, evaluation, and comparison of different hand segmentation models on the specified datasets.

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The provided text discusses hand segmentation in computer vision, focusing on datasets (Egohands and GTEA) and various neural network models (FCN8, FCN8 VGG, SegNet, UNet). It emphasizes performance metrics like accuracy, precision, recall, F1 score, Kappa, and Intersection over Union (IOU). The information does not specify the use of Near Infrared (NIR) or Far Infrared (FIR) imaging or offer detailed insights into image acquisition methods. The emphasis is on comparing different models' performance on the mentioned datasets, with UNet showing promising results. The text also touches on challenges related to hand segmentation, such as varied hand shapes, skin colors, and dynamic hand gestures.

**2.Personal Authentication Using Hand Vein Triangulation and Knuckle Shape - IEEE**

Yes, the passage provides information about the performance evaluation of a hand vein-based authentication system. Here are some key points:

1. \*\*Matching Scores and Score Assignment:\*\* The system employs a hierarchical score assignment scheme for matching triplets extracted from hand vein images. The matching scores are assigned based on the type of triplets (e.g., triplets with three bifurcation points are assigned higher scores than those with three vein endings).

2. \*\*Additional Features for Authentication:\*\* In addition to matching scores from vein maps, the system investigates the usefulness of additional features extracted from acquired images. These features include the perimeter of pixels between knuckle tips and the perimeter of the vein map. A consolidated matching score is computed by combining matching scores from vein maps and these additional features.

3. \*\*Experimental Setup and Database:\*\* The authentication scheme's performance is evaluated on a hand vein database acquired in a real environment. The database includes images from 100 users, each with three images. The users are in the age group of 14–55 years. The acquired images exhibit scale changes and rotational intraclass variations.

4. \*\*Results and Evaluation:\*\* The system's performance is assessed using various metrics, including matching scores from triplets and geometrical features obtained from knuckle tip distances. The weights for combining these matching scores are empirically selected. The Equal Error Rate (EER) is used to evaluate the system's overall performance.

5. \*\*Receiver Operating Characteristics (ROC) Curve:\*\* The ROC curve is presented to illustrate the trade-off between the False Acceptance Rate (FAR) and False Reject Rate (FRR) at different decision thresholds. The system achieves an EER of 1.14% from the combined matching scores.

6. \*\*Statistical Modeling:\*\* The distribution of matching scores from genuine user comparisons is modeled using the Generalized Extreme Value (GEV) distribution. The GEV distribution is considered appropriate for modeling the distribution of real-world matching scores, and it is compared to other distribution models like Binomial and Gaussian.

Overall, the passage describes the methodology, experimental setup, and results of a hand vein-based authentication system, emphasizing the use of matching scores and additional features for performance evaluation.