Figure 1: Overall representation of Proposed setup
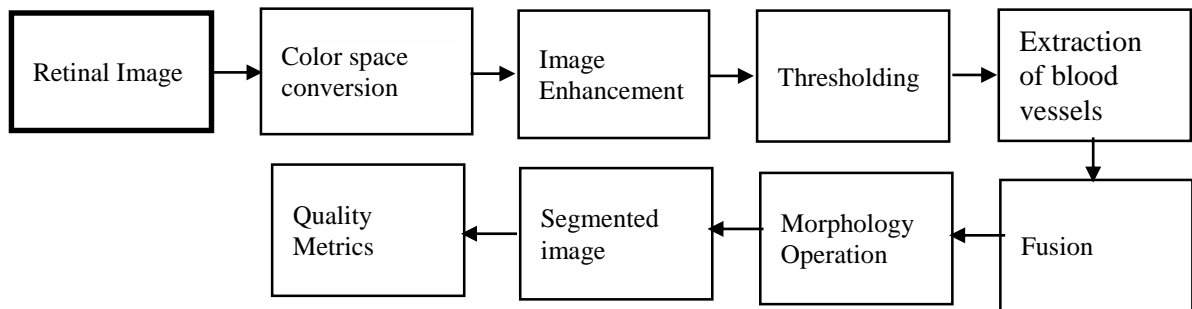

Figure 2: Block diagram of Proposed setup
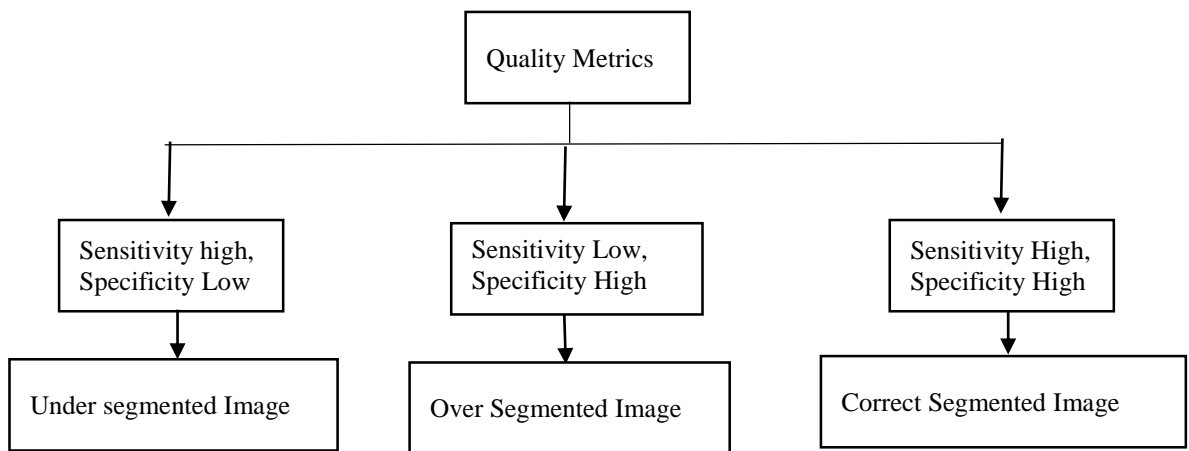

Figure 3: Quality metrics with sensitivity and Specificity

```
                    ┌─────────────────┐
                    │      Start      │
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │  Retinal Image  │
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ Covert RGB to Gray│
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ Image Enhancement│
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ Image Filtering │
                    └─────────────────┘
                             │
                      -  ┌───┐  +
                         │ Σ │
                         └───┘
                             │
                             ▼
                ┌────────────────────────┐
                │ Difference Image, replace│
                │ black ring & complement  │
                │      the image           │
                └────────────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ Top hat transform│
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ OTSU Thresholding│
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ Remove small pixels│
                    └─────────────────┘
                       │              │
                       ▼              ▼
              ┌────────────┐   ┌────────────┐
              │ Median Filter│   │   MFFOG    │
              └────────────┘   └────────────┘
                     │                │
                     ▼                ▼
              ┌────────────┐   ┌────────────┐
              │Thick Vessel│   │Thin Vessel │
              │Segmentation│   │Segmentation│
              └────────────┘   └────────────┘
                       │              │
                       ▼              ▼
                    ┌─────────────────┐
                    │  Image Fusion   │
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │  Binarization   │
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │  Morphological  │
                    │   Operation     │
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │   Segmented     │
                    │     Image       │
                    └─────────────────┘
```
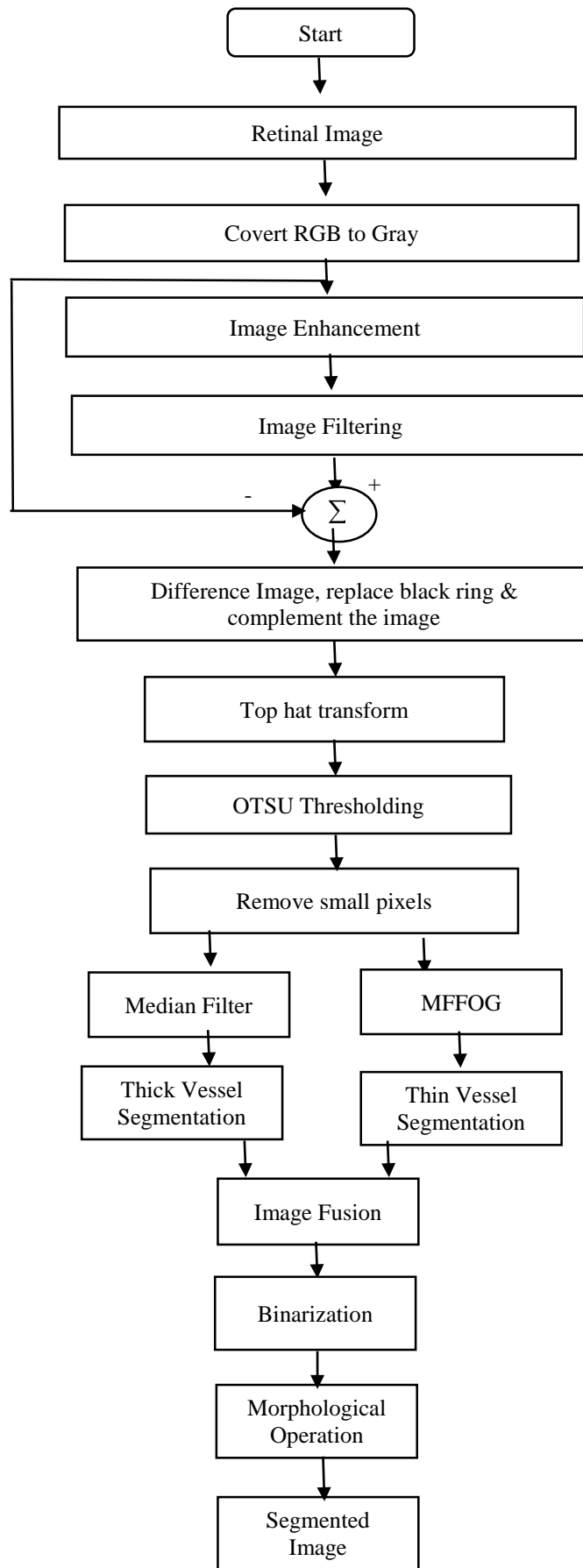
Figure 4: Flowchart of Proposed setup