

## **User Stories for CS 506 (Project, 4 credits)**

### **1) Reading: (20Hrs)**

Go through existing approaches/models on Pose Estimation.

#### **Details:**

Pose Estimation is part of the yoga posture correction.

#### **Tasks:**

- Understand how it works, network architecture being used.
- Try existing models, check supported joint types.
- Evaluate on sample Yoga pose.
- Check if additional joints prediction is needed.

### **2) Build Classification Model: (5Hrs)**

Need to write a model for classifying poses.

#### **Details:**

Classification is first part of building the overall model.

#### **Tasks:**

- Write dataset, dataloader, image transforms, training code and loss fn.
- Prepare data.

### **3) Data Collection: (20 – 25Hrs)**

Gather images specific to yoga poses, asanas. Prepare a dataset

#### **Details:**

Small datasets on this domain exists, for 8 poses, need to gather more images, add additional poses.

#### **Tasks:**

- Gather and collate existing datasets.
- Decide on most common, to support poses.
- Crawl images from websites.

### **4) Annotate Images: (10Hrs+)**

Label images with asanas being performed.

#### **Details:**

Labelled dataset doesn't already exist, need to label manually.

#### **Tasks:**

- Label images with asanas.
- Create training-pose-classification.csv, linking image to pose type.

## **5) Classification Model Training: (5Hrs)**

Train on previously labelled images.

### **Tasks:**

- Train
- Debug model
- Check accuracy

## **6) Pose Estimation Model: (25 - 30Hrs)**

Evaluate and fine tune existing model on our dataset.

### **Details:**

Might need to change the model, train and check prediction accuracy.

### **Tasks:**

- Modifications to existing model.
- Re-training.
- Evaluating results.
- Checking predictions from different viewing angle /perspectives.

## **7) Combine Model Results: (15Hrs)**

Evaluate final predictions on a single person in an image.

### **Details:**

Look how model performs overall.

### **Tasks:**

- Combine both model results.
- Add image transforms, fine tune if needed.
- Testing on new images.
- Give asanas, poses wise performance results.