2016ME20793
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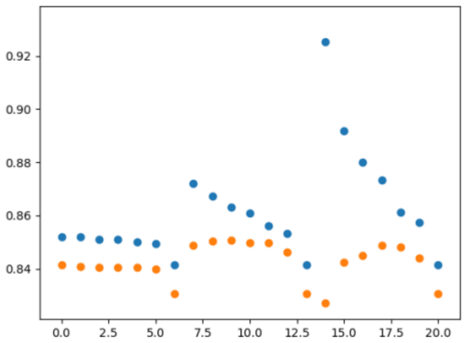
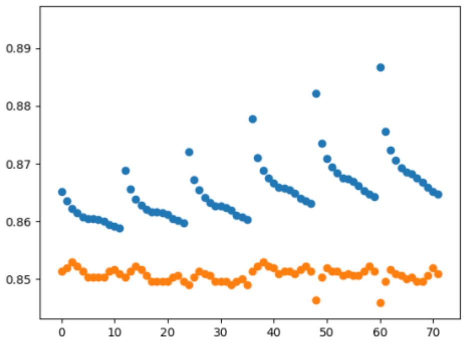


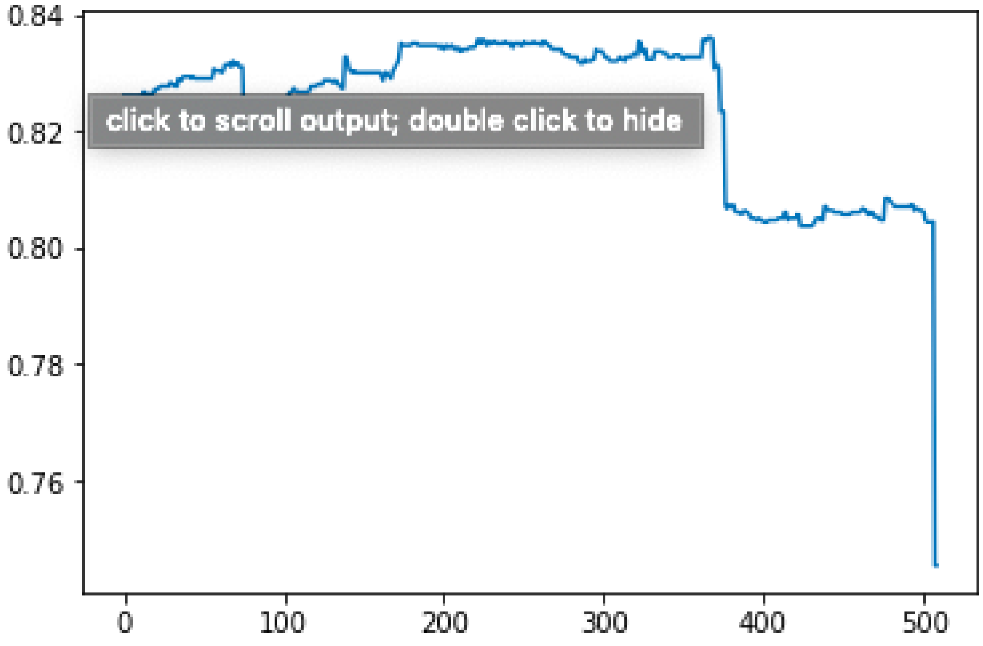


On y-axis accuracy and x-axis is the different hyper parameters

I have used depth = depth = [5,10,20] and minimum size of leaf = [1,20,50,100,500,1000,5000]

I got a tuned param depth = 10 and minimum size of leaf = 20

I also tried pruning but it’s not working. While pruning I got this kind of graph.



Here I have used the pruning code

```
def delete_unused_nodes(node):
    c1 = node["right"]["true"]+node["right"]["false"]==0
    c2 = node["left"]["true"]+node["left"]["false"]==0
    if(c1 and c2):
        node["left"] = None
        node["right"] = None
    elif(c2):
        node = node["right"]
    elif(c1):
        node = node["left"]
    return False

def post_order_delete(node):
    global tree
    if(node["left"]==None or node["right"]==None):
        return
    post_order_delete(node["left"])
    post_order_delete(node["right"])
    delete_unused_nodes(node)
post_order_delete(tree)


def get_prun_acc(node):
    if(node["right"]==None and node["left"]==None):
        if(node["true"]+node["false"]==0):
            return 0,0
        else:
            acc = node["true"]/(node["true"]+node["false"])
            return acc,acc
    else:
        right_total = node["right"]["true"] + node["right"]["false"]
        right_acc = right_total*node["right"]["pruned"]
        left_total = node["left"]["true"] + node["left"]["false"]
        left_acc = left_total*node["left"]["pruned"]
        return node["true"]/(node["true"]+node["false"]),(right_acc+left_acc)/(right_total+left_total)
```

```
acc_list = []
pred = []
c=0
def post_order(node):
    global tree
    global pred
    if(node==None):
        return
    post_order(node["left"])
    post_order(node["right"])
    prun , without_prun = get_prun_acc(node)
    acc_list.append([prun,without_prun])
    node["pruned"] = prun
    if(without_prun>prun):
        node["pruned"] = without_prun
        node["left"] = None
        node["right"] = None
        pred.append(get_accuracy(tree,val))
post_order(tree)
```