

In [64]:

Removing all variables...

In [64]: `runfile('/Users/derekbivona/Desktop/Bivona_RebootMotion/get_advice.py',
wdir='/Users/derekbivona/Desktop/Bivona_RebootMotion')`

Reloaded modules: `improve_velo`

`improve_velo.py:115: FutureWarning:`

The current behaviour of 'Series.argmax' is deprecated, use 'idxmin' instead.

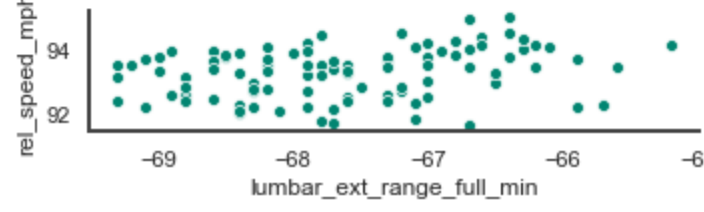
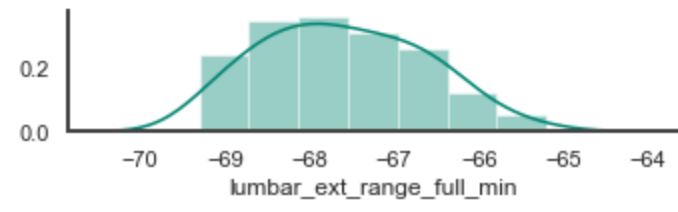
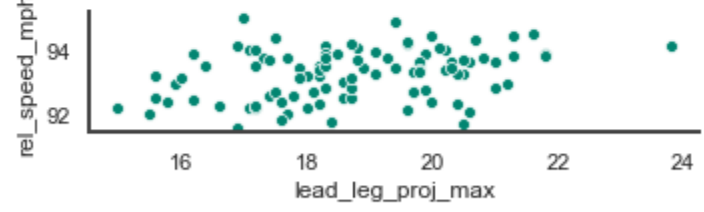
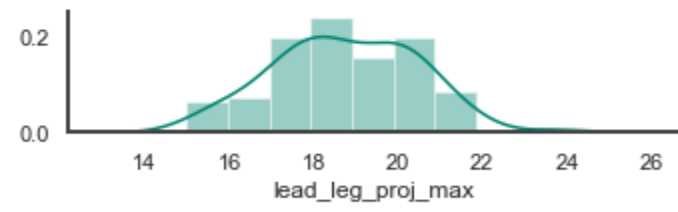
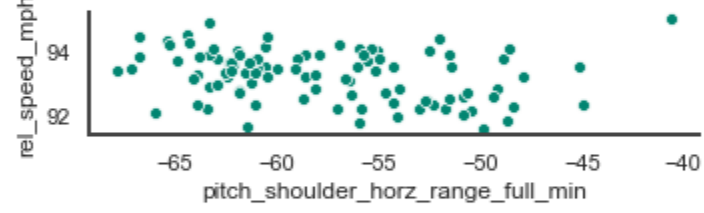
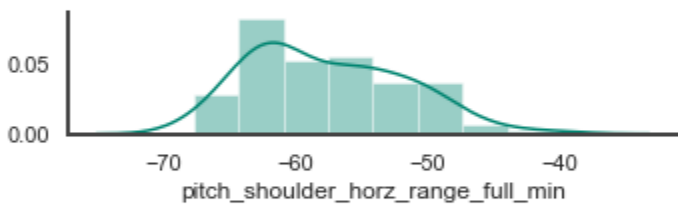
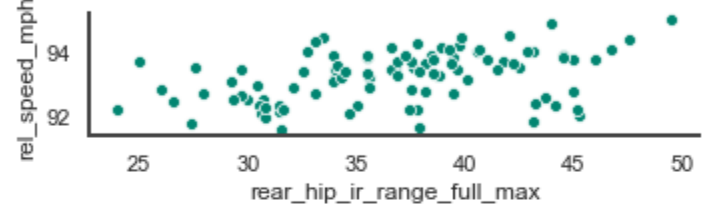
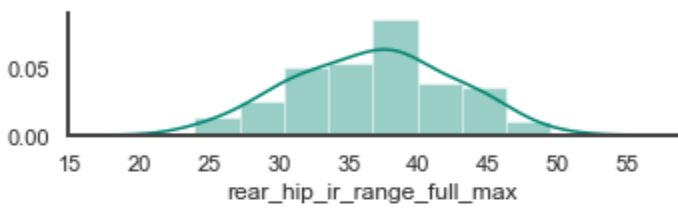
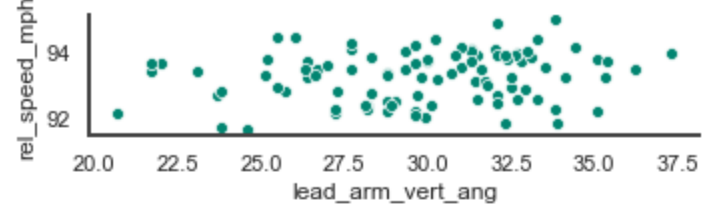
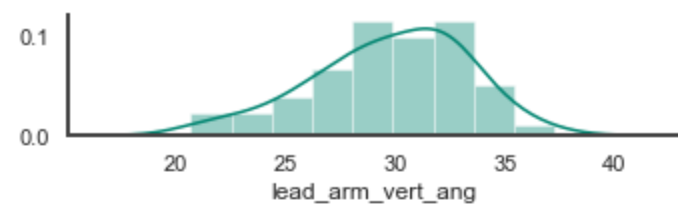
The behavior of 'argmin' will be corrected to return the positional minimum in the future. For now, use 'series.values.argmax' or 'np.argmax(np.array(values))' to get the position of the minimum row.

```
best_feature = new_pval.argmax()
```

The top 5 features influencing the velocity of this specific pitcher are:

- 1.lead_arm_vert_ang
- 2.rear_hip_ir_range_full_max
- 3.pitch_shoulder_horz_range_full_min
- 4.lead_leg_proj_max
- 5.lumbar_ext_range_full_min

The distribution of each of those parameters along with the relationship with velocity is shown below:

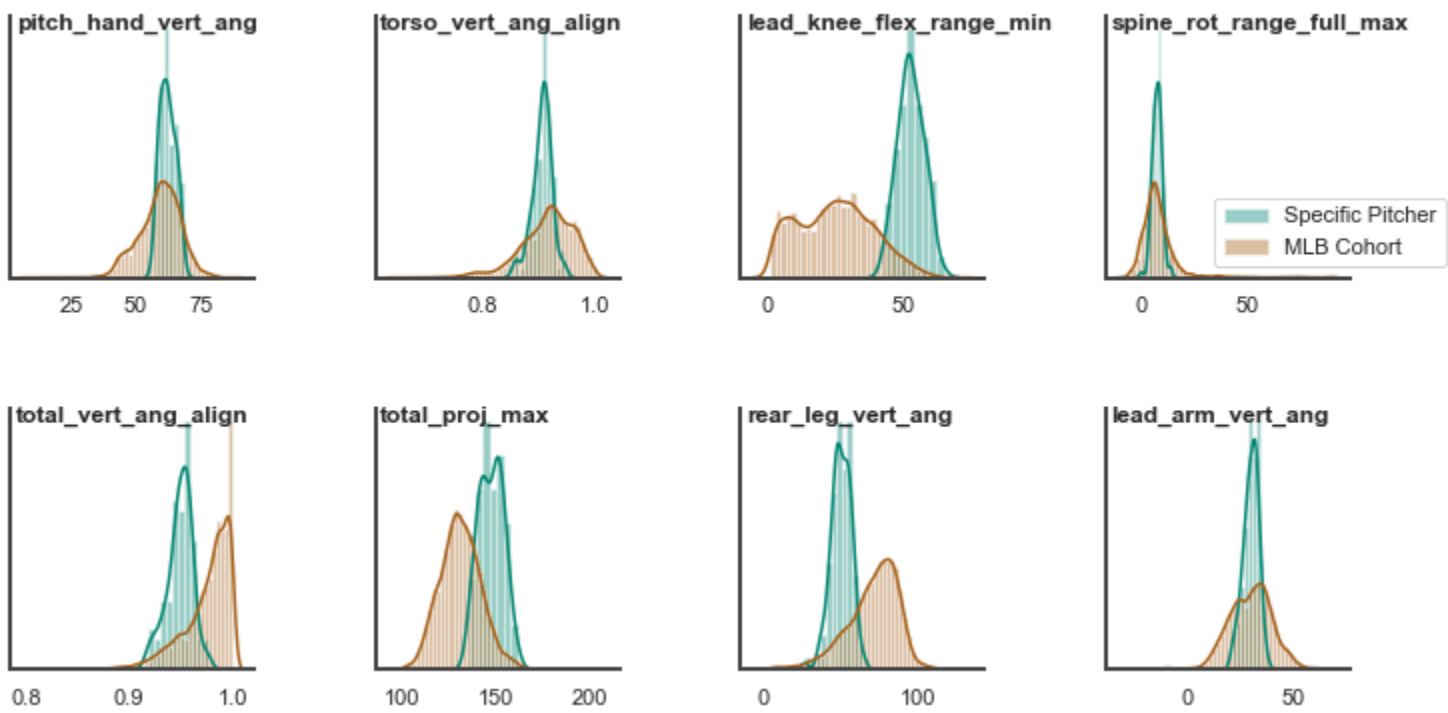


To increase velocity in the short-term, consider:
 Increasing your lead_arm_vert_ang
 Increasing your rear_hip_ir_range_full_max
 Decreasing your pitch_shoulder_horz_range_full_min
 Increasing your lead_leg_proj_max
 Increasing your lumbar_ext_range_full_min

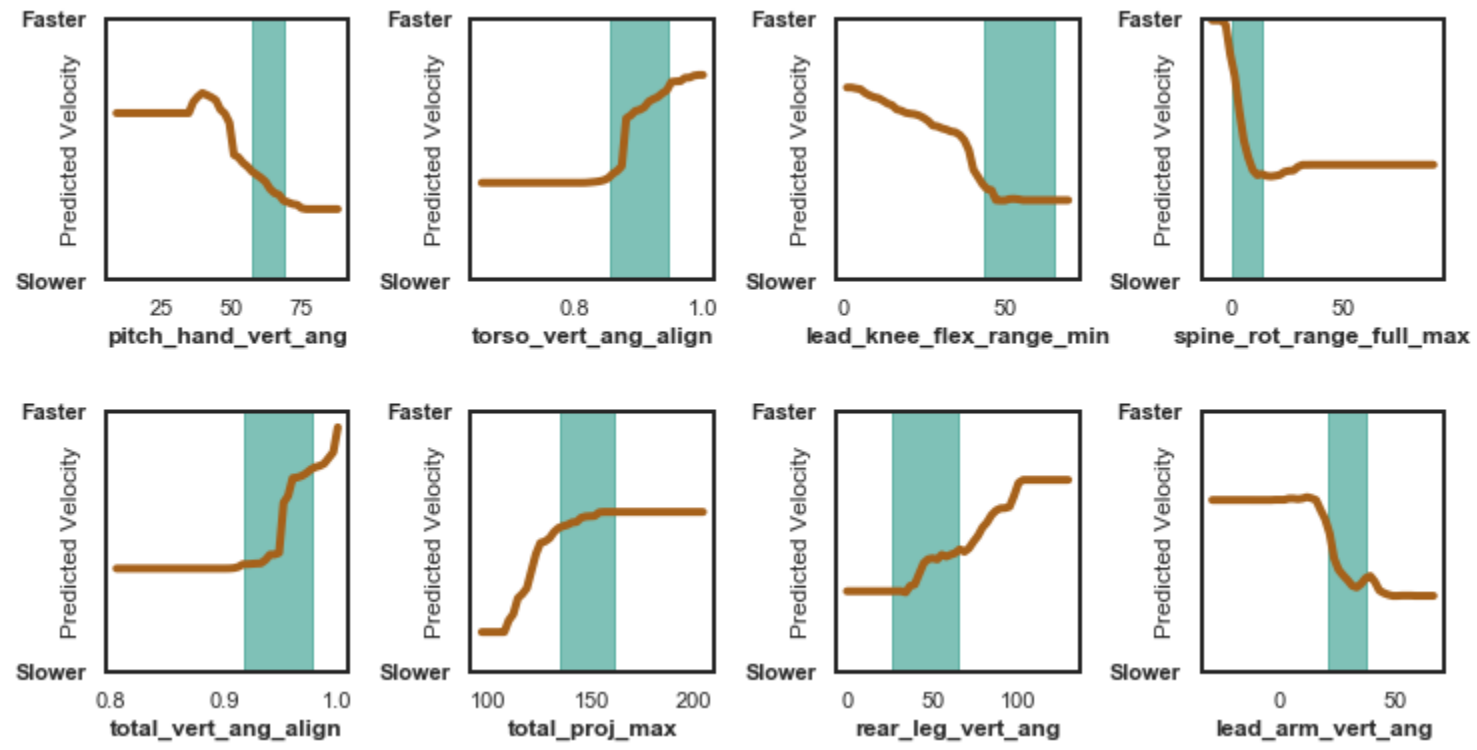
The top 8 features driving absolute velocity (from an MLB cohort) are:

- 1.pitch_hand_vert_ang
- 2.torso_vert_ang_align
- 3.lead_knee_flex_range_min
- 4.spine_rot_range_full_max
- 5.total_vert_ang_align
- 6.total_proj_max
- 7.rear_leg_vert_ang
- 8.lead_arm_vert_ang

The distributions of each of these parameters for the given pitcher is plotted over the distribution of each for the MLB cohort below:



The relationships generated with our ML model between fastball velocity and given biomechanical parameters are shown below. Highlighted in green is the range of the given pitcher.



- To increase your velocity over the long-term, consider:
- Decreasing your pitch_hand_vert_ang
 - Increasing your torso_vert_ang_align
 - Decreasing your lead_knee_flex_range_min
 - Increasing your total_vert_ang_align
 - Increasing your rear_leg_vert_ang
 - Decreasing your lead_arm_vert_ang

In [65]: