PX4 ULog Conversion Debugging Summary

1. Problem: AttributeError - 'ULog' object has no attribute 'get_duration'

   Fix:

   - Replaced ulog.get_duration() with:

     duration_sec = (ulog.last_timestamp - ulog.start_timestamp) / 1e6

2. Problem: KeyError - 'gyro_rad_s[0]'

   Fix:

   - Replaced all occurrences of 'gyro_rad_s[0]' etc. with:

     'gyro_rad[0]', 'gyro_rad[1]', 'gyro_rad[2]'

3. Problem: KeyError - 'magnetometer_ga[0]'

   Fix:

   - Removed magnetometer fields from the script because they were not present in the log.

   - Deleted these lines:

     'Magnetometer_X': ..., 'Magnetometer_Y': ..., 'Magnetometer_Z': ...

   - Removed from `final_columns` list too.

4. Problem: KeyError - 'roll'

   Fix:

   - 'vehicle_attitude' did not contain roll, pitch, yaw directly.

   - Added conversion from quaternion to RPY using scipy:

     from scipy.spatial.transform import Rotation as R

```
quats = np.vstack((attitude_df['Quat_w'], attitude_df['Quat_x'],

                   attitude_df['Quat_y'], attitude_df['Quat_z'])).T

rpy = R.from_quat(quats).as_euler('xyz', degrees=False)


attitude_df['Roll'] = rpy[:, 0]

attitude_df['Pitch'] = rpy[:, 1]

attitude_df['Yaw'] = rpy[:, 2]
```

5. Problem: KeyError when accessing ['Magnetometer_X', ...] during final DataFrame slicing.

  Fix:

   - Removed 'Magnetometer_X', 'Magnetometer_Y', 'Magnetometer_Z' from final_columns list.

With these changes, the script now successfully loads the log, converts quaternion to RPY, synchronizes the data at 50 Hz, and writes to CSV.