

| NumMobility Temporal Functions |                                   |                                     |                  |  |
|--------------------------------|-----------------------------------|-------------------------------------|------------------|--|
| Sr. No                         | Function Name                     | PyMove                              | MovingPandas     | Note   |
| 1                              | create_date_column()              | generate_date_features()            | --               |  |
| 2                              | create_time_column()              | generate_hour_features()            | --               |  |
| 3                              | create_day_of_week_column()       | generate_day_of_the_week_features() | --               |  |
| 4                              | create_weekend_indicator_column() | generate_weekend_features()         | --               |  |
| 5                              | create_time_of_day_column()       | generate_time_of_day_features()     | --               |  |
| 6                              | get_traj_duration()               | time_interval()                     | get_duration()   | 1. The time_interval() feature in PyMove just finds the interval of the whole dataset instead of finding it for individual trajectories. |
| 7                              | get_start_time()                  | --                                  | get_start_time() |  |
| 8                              | get_end_time()                    | --                                  | get_end_time()   |  |

| NumMobility Spatial Functions |   |                           |                      |      |
|-------------------------------|---|---------------------------|----------------------|------|
| Sr. No                        | Function Name                                   | PyMove                    | MovingPandas         | Note |
| 1                             | get_bounding_box()                              | get_bbox()                | get_bbox()           |      |
| 2                             | get_start_location()                            | --                        | get_start_location() |      |
| 3                             | get_end_location()                              | --                        | get_end_location()   |      |
| 4                             | create_distance_between_consecutive_column()    | generate_dist_features()  | --                   |      |
| 5                             | create_distance_from_start_column()             | --                        | --                   |      |
| 6                             | create_distance_travelled_by_date_and_traj_id() | --                        | --                   |      |
| 7                             | create_point_within_range_column()              | --                        | --                   |      |
| 8                             | create_distance_from_given_point_column()       | --                        | --                   |      |
| 9                             | create_speed_from_prev_column()                 | generate_speed_features() | add_speed()          |      |
| 10                            | create_acceleration_from_prev_column()          | --                        | --                   |      |
| 11                            | create_jerk_from_prev_column()                  | --                        | --                   |      |
| 12                            | create_bearing_column()                         | --                        | --                   |      |
| 13                            | create_bearing_rate_column()                    | --                        | azimuth()            |      |
| 14                            | create_rate_of_bearing_rate_column()            | --                        | --                   |      |
| 15                            | get_distance_travelled_by_traj_id()             | --                        | get_length()         |      |
| 16                            | get_number_of_locations()                       | --                        | --                   |      |

| NumMobility Filters |   |   |              |   |
|---------------------|---|---|--------------|---|
| Sr. No              | Function Name                             | PyMove  | MovingPandas | Note  |
| 1                   | remove_duplicates()                       | drop_duplicates(), clean_consecutive_duplicates() | --           |   |
| 2                   | filter_by_traj_id()                       | by_id()   | --           |   |
| 3                   | get_bounding_box_by_radius()              | get_bbox_by_radius()                              | --           |   |
| 4                   | filter_by_bounding_box()                  | by_bbox()   | --           |   |
| 5                   | filter_by_date()                          | --  | filter()     | 1. In MovingPandas, the filter() function is just a general filter which takes in a column and then a specific value and then filters out only the exact matches of the given specific value. |
| 6                   | filter_by_datetime()                      | by_datetime()                                     | --           |   |
| 7                   | filter_by_max_speed()                     | --  | --           |   |
| 8                   | filter_by_min_speed()                     | --  | --           |   |
| 9                   | filter_by_min_consecutive_distance()      | --  | --           |   |
| 10                  | filter_by_max_consecutive_distance()      | --  | --           |   |
| 11                  | filter_by_max_distance_and_speed()        | --  | --           |   |
| 12                  | filter_by_min_distance_and_speed()        | --  | --           |   |
| 13                  | filter_outliers_by_consecutive_distance() | clean_gps_jumps_by_distance()                     | --           |   |
| 14                  | filter_outliers_by_consecutive_speed()    | clean_gps_nearby_points_by_speed()                | --           |   |
| 15                  | remove_trajectories_with_less_points()    | clean_trajectories_with_few_points()              | --           |   |
| 16                  | hampel_outlier_detection()                | --  | --           |   |

| NumMobility Interpolation |                           |                                  |                                  |      |
|---------------------------|---------------------------|----------------------------------|----------------------------------|------|
| Sr. No                    | Interpolation Type        | PyMove                           | MovingPandas                     | Note |
| 1                         | Linear Interpolation      | Linear Interpolation is present. | Linear Interpolation is present. |      |
| 2                         | Cubic Interpolation       | --                               | --                               |      |
| 3                         | Random-Walk Interpolation | --                               | --                               |      |
| 4                         | Kinematic Interpolation   | --                               | --                               |      |