Table 1: Mapping of quality issues, preprocessing operations, and their corresponding source references. The citation indices in this table are consistent with the bibliography of the paper. References that are not cited in the paper are listed below.

Quality Issue	Operation	Source Reference
Missing latitude, longitude, or timestamps	Filter	48, 61, 62
Duplicate locations or timestamps	Filter	4, 63
Inconsistent coordinate systems or timestamp formats	Derived	72, 73
Deviation from other locations	Filter, Interpolation	48, 63, 64
Missing samples (excessively-long intervals)	Filter, Segmentation	4, 30, 48, 63
Incorrect sample order Sparsely-distributed samples	Union, Interpolation, Sort	4, 65, 66
Jittering (excessively-short intervals)		74, 75
Densely-distributed samples	Downsampling	20
Missing speed		76, 77
Anomalous speed	Filter, Segmentation	38, 48, 61, 63
Inconsistent speed units		75, 76
Inaccurate speed calculation		77, 78, 79
Missing attributes	Filter, Derived, Integration	22, 36, 41, 48, 61, 62, 62, 63, 64, 66, 67, 68, 69
Inconsistent attribute types	Union, Filter, Segmentation	22, 69, 70
Inaccurate attributes	Filter	58
Duplicate trajectory	Filter, Aggregation	31, 67
Excessively-short trajectories	Filter	48, 61, 63, 71
Missing map-matching	Integration	58, 80
Inaccurate map-matching		80, 81

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