```
% Load the LiDAR data and GCP data from CSV files
lidar_data = readmatrix('lidar.csv');
gcp_data = readmatrix('gcp.csv');

% Extract northing and easting from the data
lidar_northing = lidar_data(:, 1);
lidar_easting = lidar_data(:, 2);
gcp_northing = gcp_data(:, 1);
gcp_easting = gcp_data(:, 2);

% Compute the differences between corresponding points in LiDAR and GCP datasets
diff_northing = lidar_northing - gcp_northing;
diff_easting = lidar_easting - gcp_easting;

% Compute the squared errors
squared_error_northing = diff_northing .^ 2;
squared_error_easting = diff_easting .^ 2;

% Calculate the mean of squared errors
mse_northing = mean(squared_error_northing);
mse_easting = mean(squared_error_easting);

% Calculate the RMSE for both northing and easting
rmse_northing = sqrt(mse_northing);
rmse_easting = sqrt(mse_easting);

% Estimate the 95th percentile confidence (assuming normal distribution)
confidence_multiplier = 1.96; % for 95% confidence interval
confidence_rmse_northing = confidence_multiplier * rmse_northing;
confidence_rmse_easting = confidence_multiplier * rmse_easting;

% Display the results
fprintf('RMSE for northing: %.2f\n', rmse_northing);
fprintf('RMSE for easting: %.2f\n', rmse_easting);
fprintf('95th percentile confidence for northing: %.2f\n', confidence_rmse_northing);
fprintf('95th percentile confidence for easting: %.2f\n', confidence_rmse_easting);
```

```
RMSE for northing: 0.44
RMSE for easting: 0.77
95th percentile confidence for northing: 0.87
95th percentile confidence for easting: 1.50
```

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