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clc, clearvars, close all

accelerationtest = readtable('accelerationtest.csv');
germany2012 = readtable('germany2012.csv');
nebraska2013 = readtable('nebraska2013.csv');
michigan2012 = readtable('michigan2012.csv');

atest = accelerationtest{6,2:end}
g2012 = germany2012{6,2:end}
n2013 = nebraska2013{6,2:end}
m2012 = michigan2012{6,2:end}

atestweight = 0.2
endurancetestweight = 0.8

driveratio = linspace(0.9,7,21)

endurancetest = (g2012+n2013+m2012)/3;

endurancetest = (endurancetest - min(endurancetest))/(max(endurancetest)-
min(endurancetest));
atest = (atest - min(atest))/(max(atest)-min(atest));

score = atest*atestweight + endurancetest*endurancetestweight

subplot(1,3,1)
plot(driveratio,score)
title('Score vs Driveratio')
subplot(1,3,2)
plot(driveratio,atest)
title('Acceleration Time vs Driveratio')
subplot(1,3,3)
plot(driveratio,endurancetest)
title('Endurance Lap Time vs Driveratio')

% Generate high-resolution dataset
x_interp = linspace(driveratio(1), driveratio(end), 10000);
y_interp = spline(driveratio, score, x_interp);

% Find the minimum value and its index
[min_value, min_index] = min(y_interp);

% Plot original and interpolated data
figure;
plot(driveratio, score, 'ro', 'MarkerSize', 8); % Original data points
hold on;
plot(x_interp, y_interp, 'b-', 'LineWidth', 1.5); % Interpolated data
legend('Original Data', 'Interpolated Data');
xlabel('driveratio');
ylabel('score');
title('Driveratio vs Score');

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Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating variable names for the table. The original column headers are saved in the VariableDescriptions property.

Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.

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atest =

Columns 1 through 7

5.8155	5.0552	4.5687	4.4301	4.3816	4.3709	4.3709
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Columns 8 through 14

4.3709	4.3709	4.3709	4.3709	4.3791	4.4096	4.4560
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Columns 15 through 21

4.5149	4.5846	4.6636	4.7505	4.8444	4.9443	5.0497
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g2012 =

Columns 1 through 7

72.4944	70.1490	68.9711	68.4366	68.2797	68.2517	68.2517
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Columns 8 through 14

68.2517	68.2517	68.2517	68.2517	68.2670	68.3505	68.5254
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Columns 15 through 21

68.8152	69.2367	69.8141	70.5416	71.4232	72.4569	73.6493
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n2013 =

Columns 1 through 7

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51.7597	49.9596	49.0896	48.8413	48.7836	48.7740	48.7741
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Columns 8 through 14

48.7741	48.7741	48.7741	48.7741	48.7791	48.8092	48.8601
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Columns 15 through 21

48.9277	49.0141	49.1327	49.3151	49.5855	49.9617	50.4302
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m2012 =

Columns 1 through 7

45.8193	43.6518	42.3293	41.4277	40.9618	40.8745	40.8746
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Columns 8 through 14

40.8746	40.8746	40.9999	41.4233	42.1414	43.0964	44.2326
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Columns 15 through 21

45.5382	47.0217	48.6876	50.4929	52.4334	54.5012	56.6441
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atestweight =

0.2000

enduranceweight =

0.8000

driveratio =

Columns 1 through 7

0.9000	1.2050	1.5100	1.8150	2.1200	2.4250	2.7300
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Columns 8 through 14

3.0350	3.3400	3.6450	3.9500	4.2550	4.5600	4.8650
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Columns 15 through 21

5.1700	5.4750	5.7800	6.0850	6.3900	6.6950	7.0000
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score =

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Columns 1 through 7

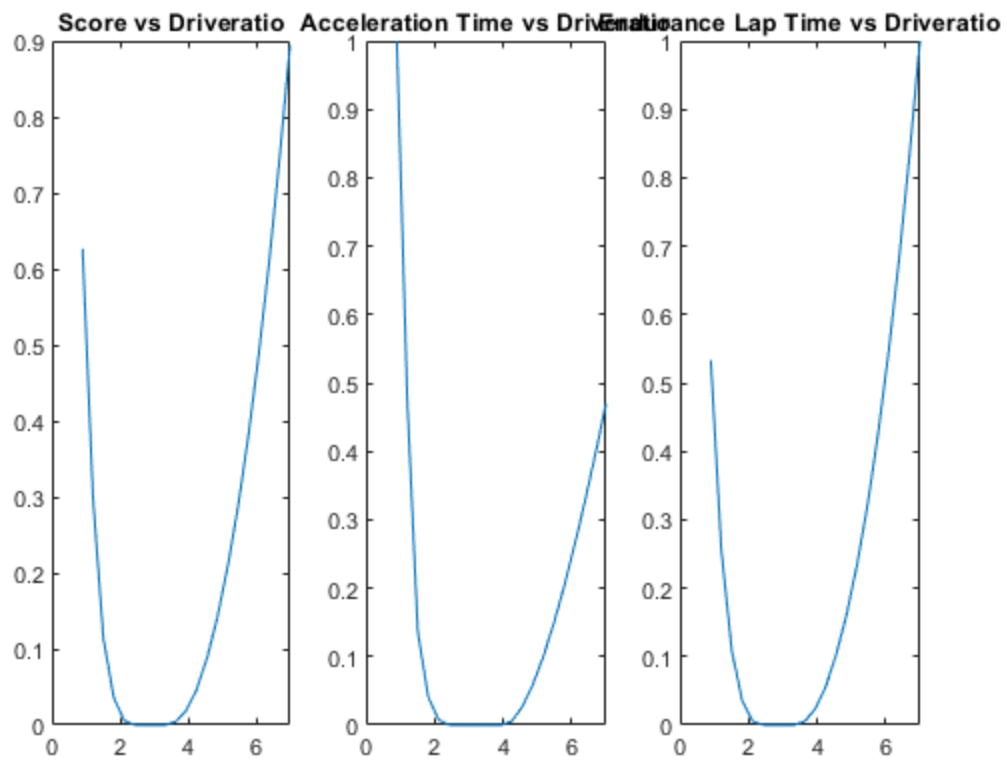
0.6267	0.3001	0.1147	0.0364	0.0059	0	0.0000
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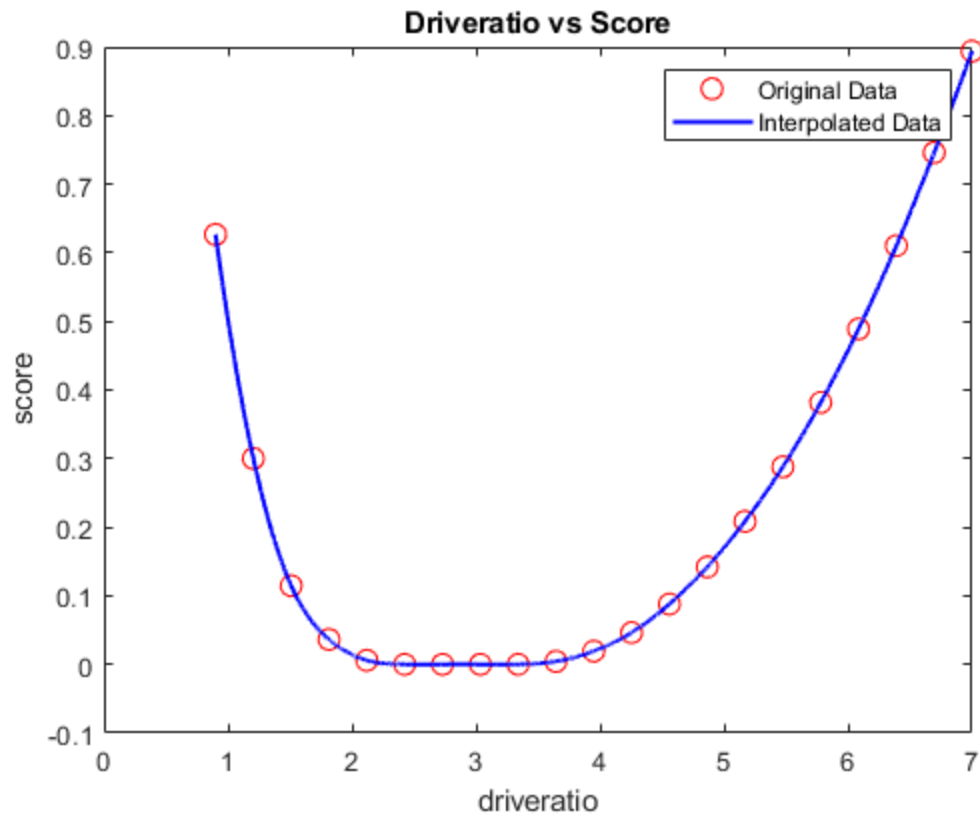
Columns 8 through 14

0.0000	0.0000	0.0044	0.0192	0.0463	0.0879	0.1421
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Columns 15 through 21

0.2085	0.2880	0.3817	0.4889	0.6103	0.7461	0.8940
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