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MyMainScript2_noisy

```
%This correspond to p1 - 3xn
img1 = importdata('../data/Features2D_dataset2.mat');
p1 = img1(1:2, :)';

%This correspond to p - 4xn
img2 = importdata('../data/Features3D_dataset2.mat');
p = img2(1:3, :)';

n = size(img1, 2);
```

Adding noise

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
maxc = 0.05 * max(max(abs(img2)));
p1 = p1 + (maxc .* randn([n 2]));
p  = p  + (maxc .* randn([n 3]));
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

a = [p, ones(n, 1), zeros(n, 4)];
q = -1 * p .* (p1(:, 1)*ones(1,3)) ;
a = [a q (-1 * p1(:, 1))];

b = [zeros(n, 4), p, ones(n, 1)];
r = -1 * p .* ( p1(:, 2)*ones(1,3)) ;
b = [b r (-1 * p1(:, 2))];

A = [ a; b];

[U, D, V] = svd(A);

% Taking the last row of matrix V so
% that we have row of V corresponding
% to min eigen value
m = V(:, 12)';
M = reshape(m, 4, 3)';

p1val = M * img2;
p1val = p1val ./ (ones(3,1)*p1val(3,:));
```

Value of M

```
M
```

```
M =

    0.0023   -0.0006   -0.0037    0.9726
   -0.0013    0.0042   -0.0010    0.2324
   -0.0000   -0.0000   -0.0000    0.0024
```

Error between original and calculated image

```
error = norm(p1val - img1)/sqrt(norm(p1val) * norm(img1)) * 100;
% value of error (in percentage)
error
```

```
error =

    6.1283
```

Published with MATLAB® R2013a