Image processing in Matlab: Distribution of pixel values

Robert B. Fisher
School of Informatics
University of Edinburgh

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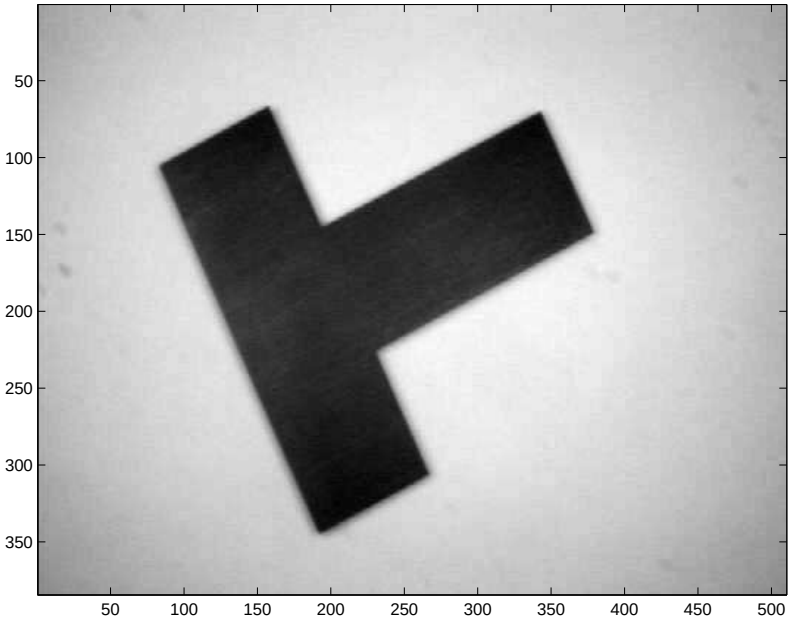
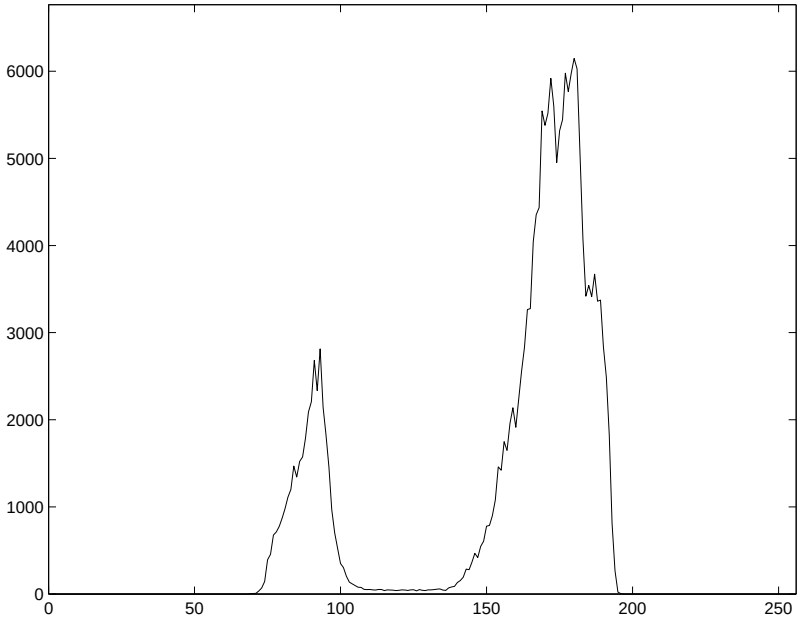
Image and Result





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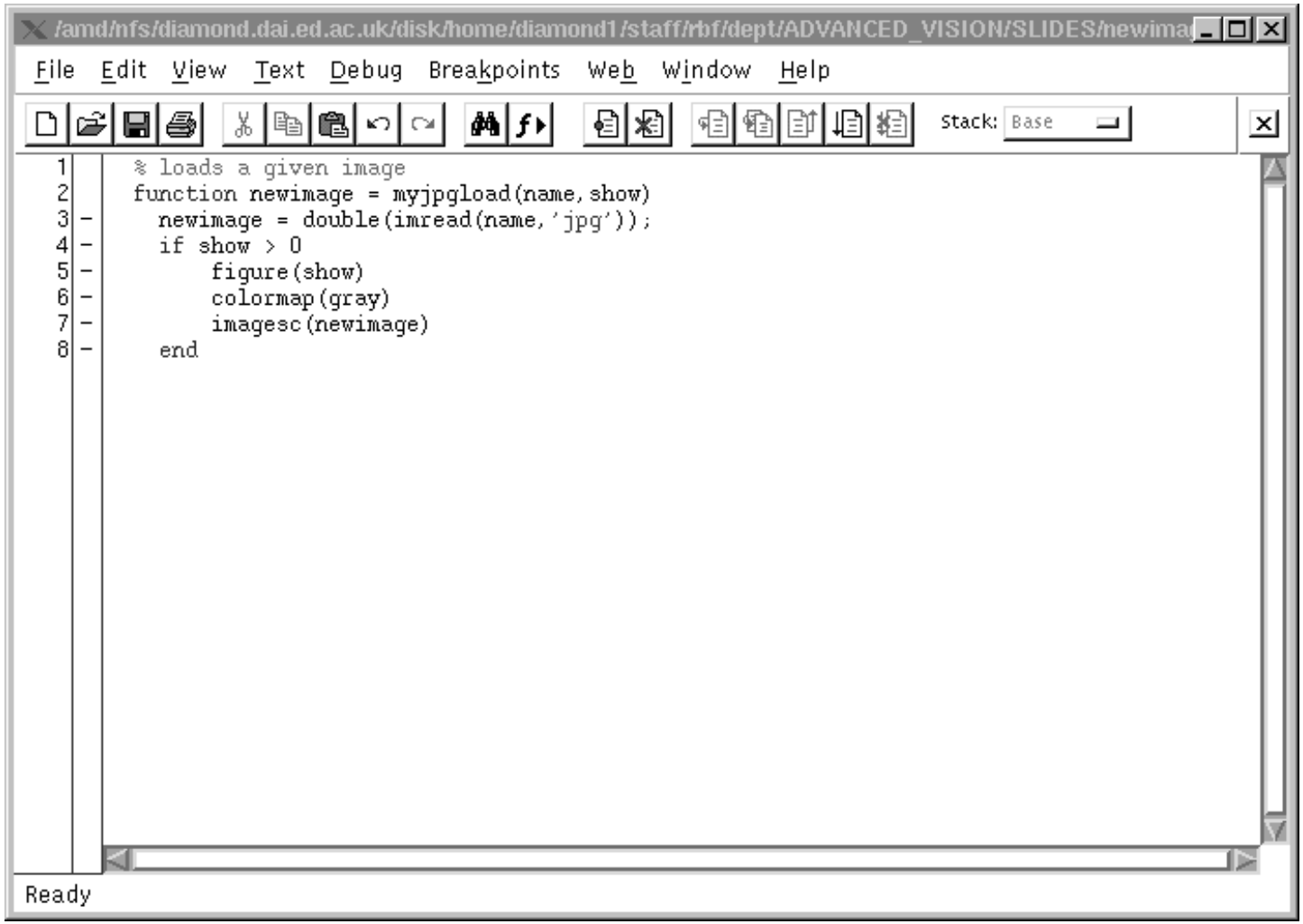
Matlab for image read and display



Can also use emacs on *.m files in another window.

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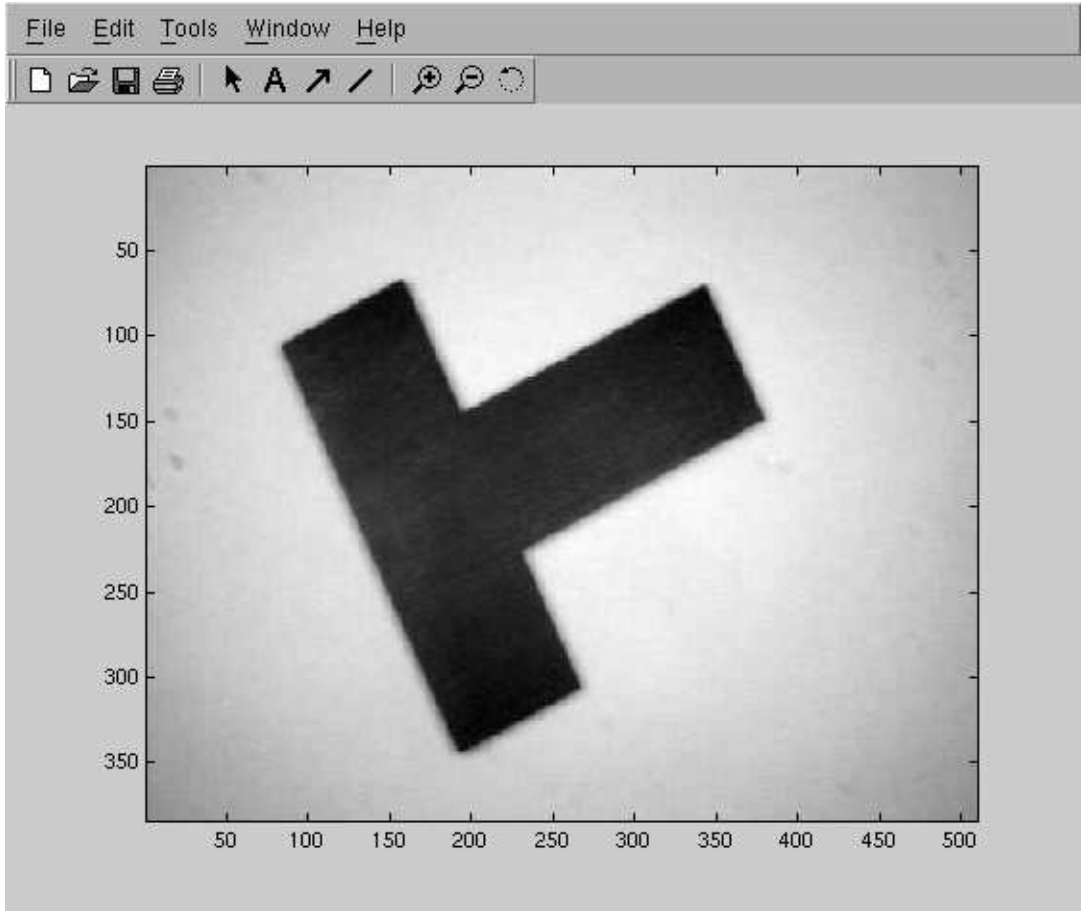
Results figure output



Use File– >Export to save *.eps files for printing and documents

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Matlab in command window

```
bigF = myjpgload('partbigF',3);
[H,W] = size(bigF)

  H =
     384

  W =
     510

figure(3)              % what the '3' above does
colormap(gray)         % "
imagesc(bigF)          % "
```


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bigF histogram

```
thehist = zeros(256,1);
[H,W] = size(bigF);
for r = 1 : H
  for c = 1 : W
    value = round(bigF(r,c));
    if value < 0        % array goes 1:256
      value = 0;        % but image goes 0:255
    elseif value > 255
      value = 255;
    end
    thehist(value+1) = thehist(value+1) + 1;
  end
end
```


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```
figure(4)
plot(thehist)
axis([0, 255, 0, 1.1*max(thehist)])
```


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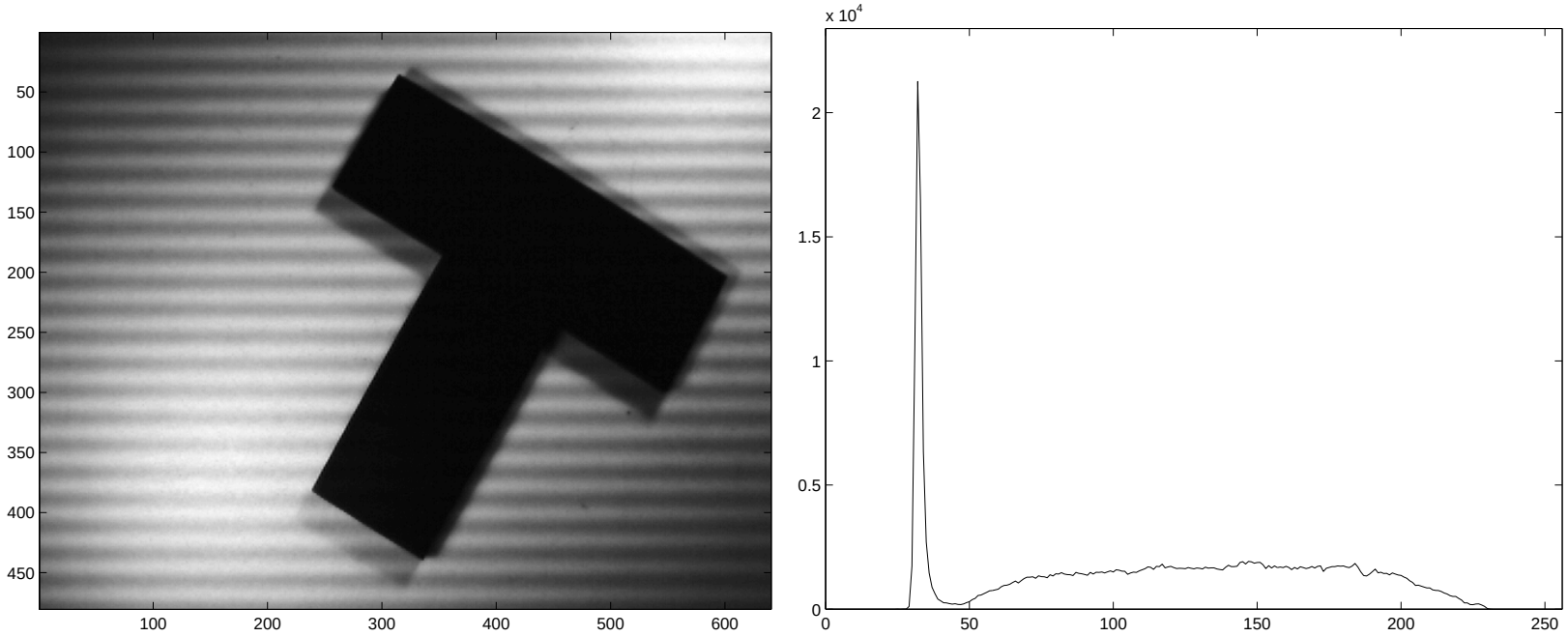
Histogram Output



Why not 2 big peaks?

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histc histogram builtin

```
% set up bin edges for histogram
edges = zeros(256,1);
for i = 1 : 256
  edges(i) = i-1;
end
[R,C] = size(bigF);
imagevec = reshape(bigF,1,R*C); % make long array
thehist = histc(imagevec,edges)'; % do histog.

figure(1)
plot(thehist)
axis([0, 255, 0, 1.1*max(thehist)])
```


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Lecture Overview

- Some simple Matlab for image loading and figures
- Histograms of image values
- Why histograms can be messy

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