```
%{

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ECES 352 - Lab 3.3.1

%}

% Threebaseperiodicity_vs_position = threebasefreq_stft(DNA_SEQUENCE, WINDOW_LENGTH, NFFT)

function Threebaseperiodicity_vs_position = threebasefreq_stft(DNA_SEQUENCE, WINDOW_LENGTH, N
FFT)

%       sequence1 = DNA_SEQUENCE(1 : 81579);
        % sequence length = 81579

        % convert A, T, C, G to binary numbers
        coding_A = double(upper(DNA_SEQUENCE) == 'A');
        coding_T = double(upper(DNA_SEQUENCE) == 'T');
        coding_C = double(upper(DNA_SEQUENCE) == 'C');
        coding_G = double(upper(DNA_SEQUENCE) == 'G');

%       coding_A = double(upper(sequence1) == 'A');
%       coding_T = double(upper(sequence1) == 'T');
%       coding_C = double(upper(sequence1) == 'C');
%       coding_G = double(upper(sequence1) == 'G');

        sequence_FT = abs(fft(coding_A, NFFT)) + ...
                abs(fft(coding_T, NFFT)) + ...
                abs(fft(coding_C, NFFT)) + ...
                abs(fft(coding_G, NFFT));

        %       msum = movsum(DNA_SEQUENCE, WINDOW_LENGTH);

        s = spectrogram(coding_A, WINDOW_LENGTH, WINDOW_LENGTH-1, NFFT, 'yaxis');
        fft_s = abs(fft(sum(real(s))));         % take FFT of spectrogram results
        fft_s = fft_s(50:length(fft_s) - 50);   % remove beginning and end spikes
%       plot(fft_s)

        Threebaseperiodicity_vs_position = fft_s;
end







% STFT
% for i = 0:81706
%       X = x * w * exp(-1j * (2 * pi *
% end



% movsum(A, B)
```

```
% A = vector
% B = window length
```

```
Not enough input arguments.

Error in threebasefreq_stft (line 16)
        coding_A = double(upper(DNA_SEQUENCE) == 'A');
```

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