

Computer Vision
Fall 2026
Skidmore College
Instructor: Michael Eckmann

Due: Monday 11/02/2026 by 11:59 p.m.

Homework Assignment 02

Topic – code for linear regression / gradient descent

Learning Goals –

understand linear regression and gradient descent well enough to implement it using numpy

The assignment is to implement code at the place of this comment:

```
# your code here to assign the newWeights each iteration
```

which appears on line 36 in linreg-homework.py

and to implement code to compute the value of the error at this point in the code:

```
# code here to compute the loss after this epoch of training  
# store this computed loss (mean squared error) in the variable  
# error
```

Important information:

If you implement code correctly to set the newWeights then after 4001 iterations the weights should be:
final weights: [1.30770099 -0.19043678]

Keep ALL other code as is.

Hint:

After you figure out what code you think you need to write, I suggest entering all the code up to, but not including the for loop, into an interactive environment (python3 shell or Jupyter notebook). Then enter the newWeights initialization line.

Use the interactive environment to see what the various variables values are, the shapes of their arrays etc. This could help you as you build up the code that you need to add after the newWeights initialization line in the loop. e.g. you could write parts of the code interactively to make sure the code is doing what you want it to, given the values of the data so far.