MultinomialSoftmax

March 21, 2024

[3]:
```
import math
```

[7]:
```
def softmax(z):
  # compute a list of exp(z_k) for each z_k in z
  u = [math.exp(z_k) for z_k in z]

  # compute the sum of all elements in u
  Z = sum(u)

  # compute the normalized probabilities
  p = [u_k / Z for u_k in u]

  return p
```

[8]:
```
z = [0.6, 1.1, -1.5, 1.2, 3.2, -1.1]
p = softmax(z)
print('The softmax probabilities are:', p)
```

```
The softmax probabilities are: [0.054825408857653565, 0.09039181775844467,
0.006713723746217652, 0.0998984082186269, 0.7381549425213091,
0.010015698897748167]
```

[ ]:
```

```