In [1]:
```
### IMPORT LIBRARIES, INITIALIZE DATA ###

import pandas as pd
import numpy as np
import matplotlib.pyplot
import pylab

uniform_sample = np.random.uniform(0,1,1000)
```

In [2]:
```
### GENERATE X ###
def inverseCDF(u):
    if u <= 0.5:
        return (u / 2) ** 0.5
    else:
        u = u - 0.5
        return 1 - (u / 2) ** 0.5

### GENERATE Y ###
def compute_y(x):
    if x <= 0.5:
        val = np.random.uniform(0,2*x,1)[0]

    else:
        val = np.random.uniform(0,(2 - (2*x)),1)[0]

    return val
```

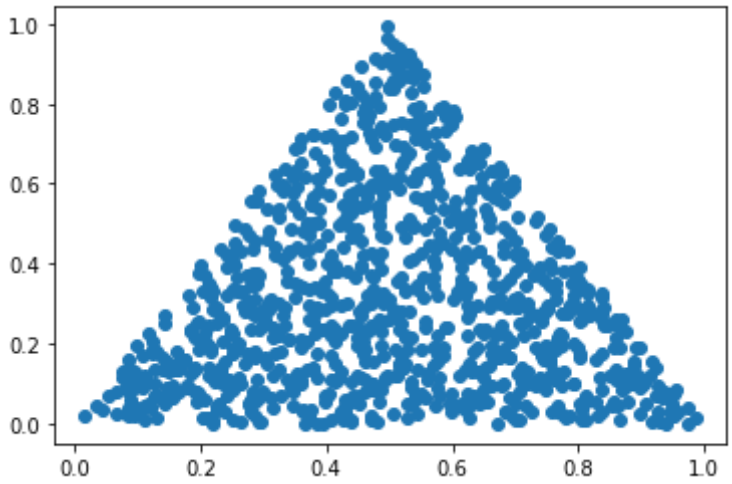
In [3]:
```
### GENERATE X,Y PAIRS ###
x_values = []
y_values = []

for i in range(1000):
    u = uniform_sample[i]
    x = inverseCDF(u)
    y = compute_y(x)

    x_values.append(x)
    y_values.append(y)

matplotlib.pyplot.scatter(x_values,y_values)
```

Out[3]:
```
<matplotlib.collections.PathCollection at 0x7fb0a8ea62b0>
```


1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0