useret – work with reticulate for python-R interoperation

Setup

```
library(reticulate)

os <- import("os")
sy <- import("sys")
np <- import("numpy")
pd <- import("pandas")
sk <- import("sklearn.decomposition")
```

Import some 10x data

We'll use R to do the I/O here.

```
df =  read.csv(system.file(
        "csv/c1000p.csv.gz", package="useret"))
class(df)
```

```
## [1] "data.frame"
```

```
head(df[,1:5])
```

```
##                    X AAACCTGAGATAGGAG.1 AAACCTGAGCGGCTTC.1
## 1 ENSMUSG00000109510                   0                   0
## 2 ENSMUSG00000107722                   0                   0
## 3 ENSMUSG00000108976                   0                   0
## 4 ENSMUSG00000109088                   0                   0
## 5 ENSMUSG00000109128                   0                   0
## 6 ENSMUSG00000106321                   0                   0
##   AAACCTGAGGAATCGC.1 AAACCTGAGGACACCA.1
## 1                  0                  0
## 2                  0                  0
## 3                  0                  0
## 4                  0                  0
## 5                  0                  0
## 6                  0                  0
```

```
mat = data.matrix(df[,-1])
```

Convert to python, try ipca

```
numdata = r_to_py(mat)
class(numdata)
```

```
## [1] "numpy.ndarray"         "python.builtin.object"
```

```
numdata$shape
```

```
## (16057, 1000)
```

```
ipca = sk$IncrementalPCA(numdata)
dim(ipca$n_components)
```

```
## [1] 16057  1000
```