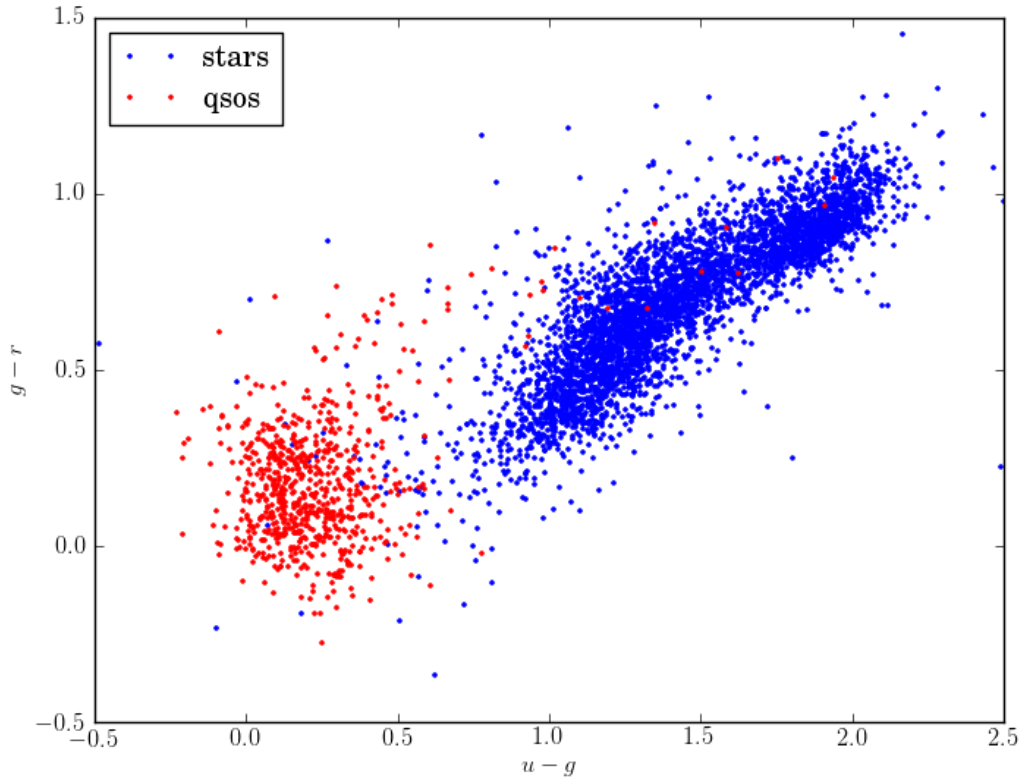
SDSS Galaxy Colors

The function **`fetch_sdss_galaxy_colors()`** used below actually queries the SDSS CASjobs server for the colors of the 50,000 galaxies. Below we extract the $u-g$ and $g-r$ colors for 5000 stars, and scatter-plot the results



Code output:

Python source code:

```
# Author: Jake VanderPlas <vanderplas@astro.washington.edu>
# License: BSD
#   The figure is an example from astroML: see http://astroML.github.com
import numpy as np
from matplotlib import pyplot as plt

from sklearn.neighbors import KNeighborsRegressor

from astroML.datasets import fetch_sdss_galaxy_colors
from astroML.plotting import scatter_contour

#------------------------------------------------------------
# Download data
data = fetch_sdss_galaxy_colors()
data = data[::10]  # truncate for plotting

# Extract colors and spectral class
ug = data['u'] - data['g']
gr = data['g'] - data['r']
spec_class = data['specClass']

stars = (spec_class == 2)
qsos = (spec_class == 3)

#------------------------------------------------------------
# Prepare plot
fig = plt.figure()
ax = fig.add_subplot(111)
```

```
ax.set_xlim(-0.5, 2.5)
ax.set_ylim(-0.5, 1.5)

ax.plot(ug[stars], gr[stars], '.', ms=4, c='b', label='stars')
ax.plot(ug[qsos], gr[qsos], '.', ms=4, c='r', label='qsos')

ax.legend(loc=2)

ax.set_xlabel('$u-g$')
ax.set_ylabel('$g-r$')

plt.show()
```

[download source: plot_sdss_galaxy_colors.py]