In [2]:

```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

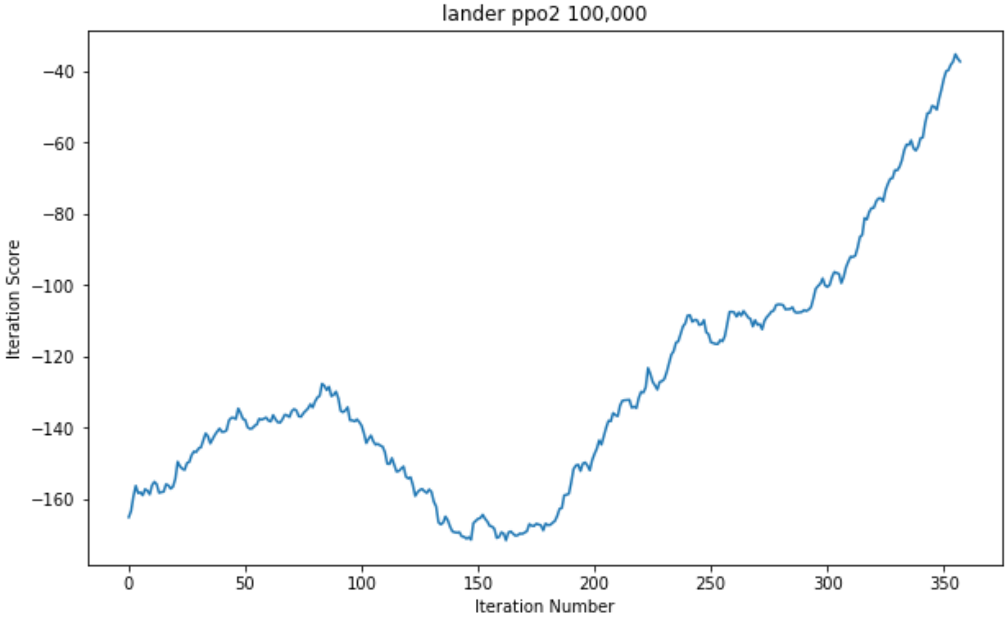
In [3]:

```
# Nearest Episodes for Moving average
k = 100
```

In [4]:

```
# lander ppo2 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ppo2_100000.csv", index_col=False)
lander_ppo2_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x_h = pd.to_numeric(lander_ppo2_100000_df.index.values)
ppo2_hy = pd.to_numeric(lander_ppo2_100000_df.r.values)
ax.set_title("lander ppo2 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x_h , ppo2_hy);

ppo2_hy2 = []
for i in range(len(ppo2_hy) - k):
    num = 0
    for j in range(k):
        num += ppo2_hy[i+j]
    ppo2_hy2.append(num/k)

ax.plot(x_h[:-k], ppo2_hy2);
```

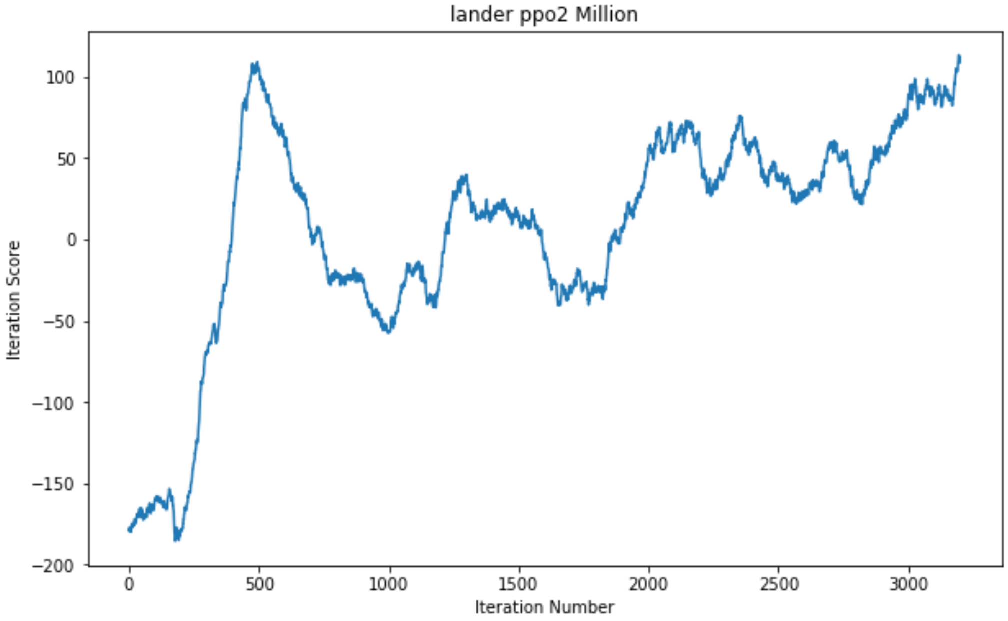
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:5: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  """
```



In [5]:

```
# lander ppo2 MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ppo2_million.csv", index_col =False)
lander_ppo2_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x_m = pd.to_numeric(lander_ppo2_million_df.index.values)
ppo2_my = pd.to_numeric(lander_ppo2_million_df.r.values)
ax.set_title("lander ppo2 Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x_m , ppo2_my);

ppo2_my2 = []
for i in range(len(ppo2_my) - k):
    num = 0
    for j in range(k):
        num += ppo2_my[i+j]
    ppo2_my2.append(num/k)

ax.plot(x_m[:-k], ppo2_my2);
```

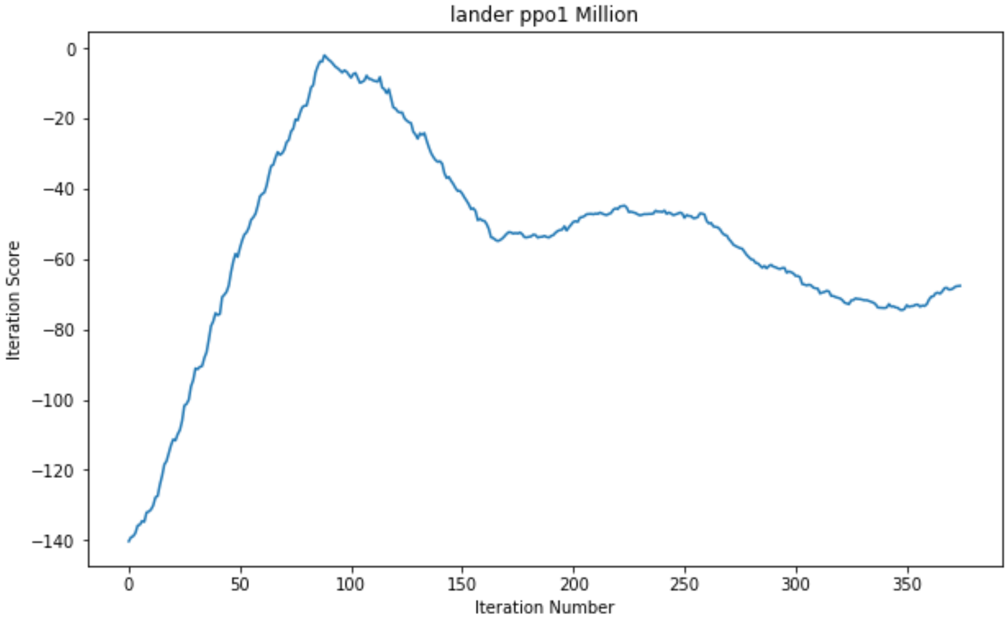
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [6]:

```
# lander ppo1 MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ppo1_million.csv", index_col=False)
lander_ppo1_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_ppo1_million_df.index.values)
ppo1_my = pd.to_numeric(lander_ppo1_million_df.r.values)
ax.set_title("lander ppo1 Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x , ppo1_my);

ppo1_my2 = []
for i in range(len(ppo1_my) - k):
    num = 0
    for j in range(k):
        num += ppo1_my[i+j]
    ppo1_my2.append(num/k)

ax.plot(x[:-k], ppo1_my2);
```

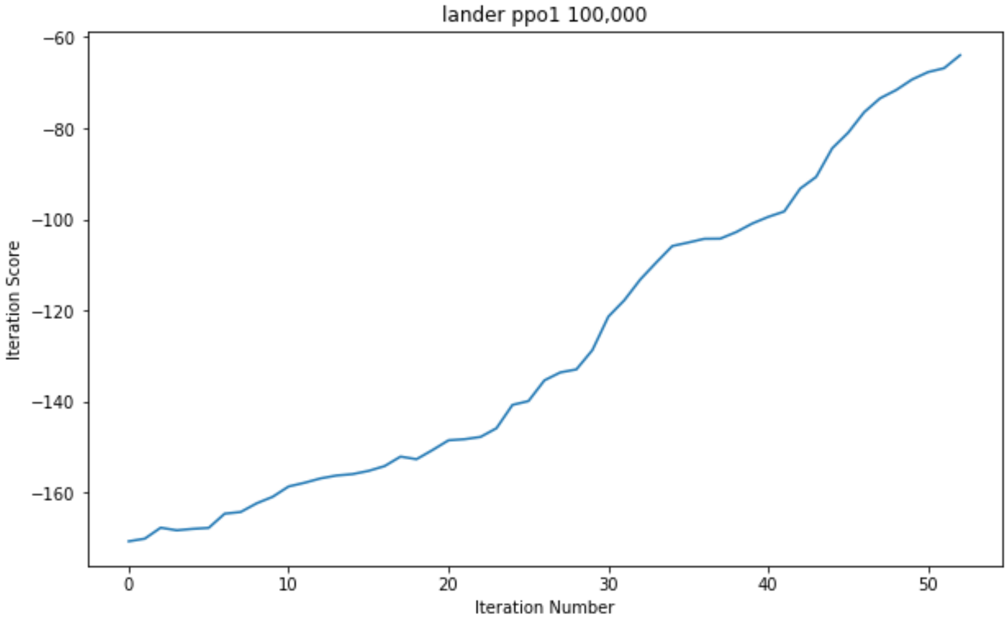
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [7]:

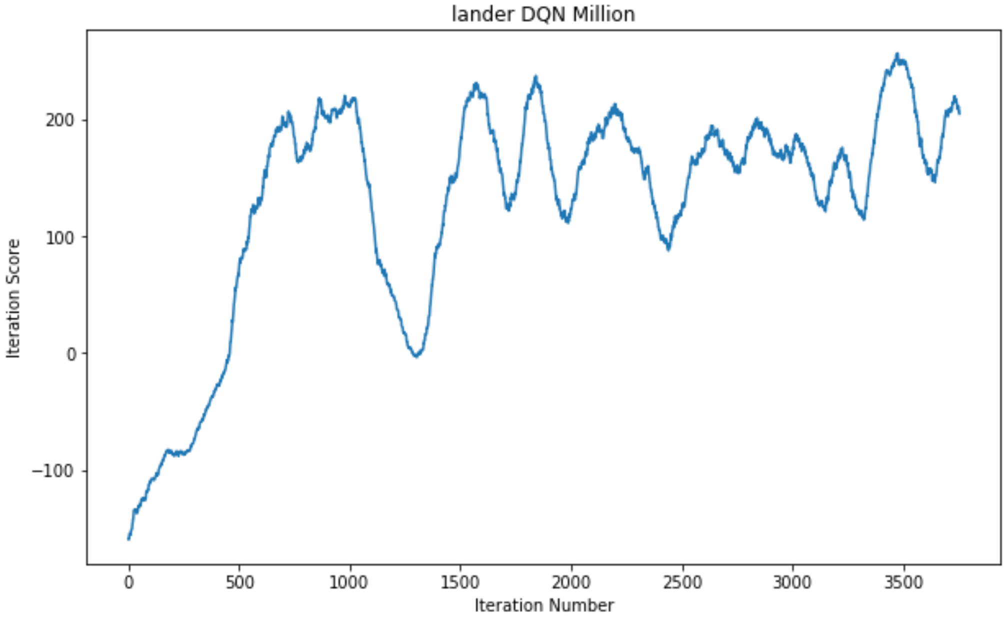
```
# lander ppo1 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ppo1_100000.csv", index_col=False)
lander_ppo1_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_ppo1_100000_df.index.values)
ppo1_hy = pd.to_numeric(lander_ppo1_100000_df.r.values)
ax.set_title("lander ppo1 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x , ppo1_hy);

ppo1_hy2 = []
for i in range(len(ppo1_hy) - k):
    num = 0
    for j in range(k):
        num += ppo1_hy[i+j]
    ppo1_hy2.append(num/k)

ax.plot(x[:-k], ppo1_hy2);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [8]:
```
# lander DQN Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_dqn_million.csv", index_col=False)
lander_dqn_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_dqn_million_df.index.values)
dqn_my = pd.to_numeric(lander_dqn_million_df.r.values)
ax.set_title("lander DQN Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x , dqn_my);

dqn_my2 = []
for i in range(len(dqn_my) - k):
    num = 0
    for j in range(k):
        num += dqn_my[i+j]
    dqn_my2.append(num/k)

ax.plot(x[:-k], dqn_my2);
```

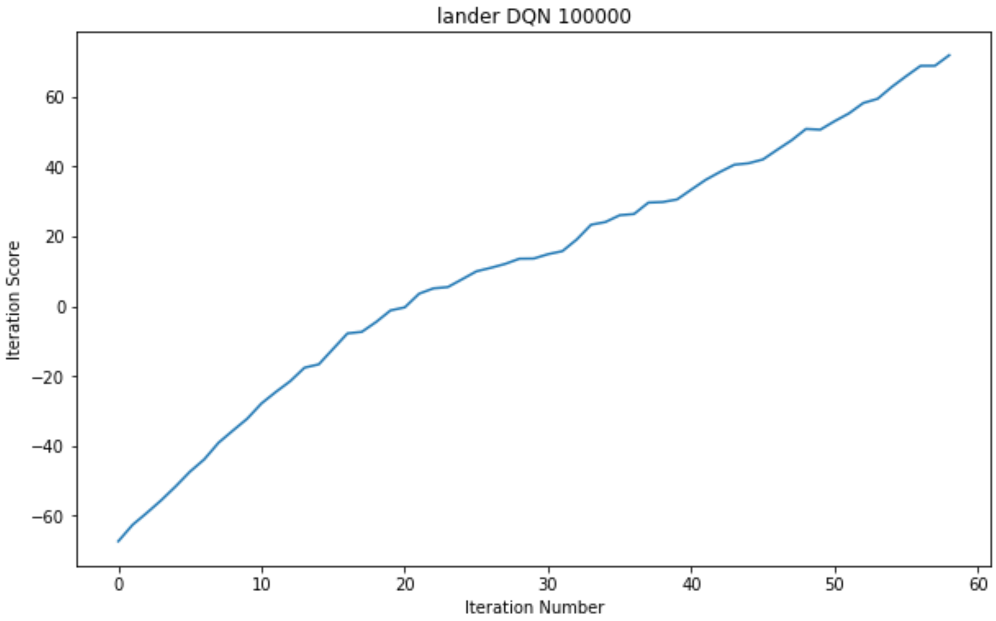
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [9]:

```
# lander DQN 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_dqn_100000.csv", index_col=False)
lander_dqn_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_dqn_million_df.index.values)
dqn_my = pd.to_numeric(lander_dqn_million_df.r.values)
ax.set_title("lander DQN 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x , dqn_my);

dqn_hy2 = []
for i in range(len(dqn_my) - k):
    num = 0
    for j in range(k):
        num += dqn_my[i+j]
    dqn_hy2.append(num/k)

ax.plot(x[:-k], dqn_hy2);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [10]:

```
# lander DDPG Million
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ddpg_million.csv")
lander_ddpg_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_ddpg_million_df.index.values)
y = pd.to_numeric(lander_ddpg_million_df.l.values)
ax.set_title("lander DDPG Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);

# Moving average dangerous, maybe like k-nearest neigbors type of thing
```

```
---------------------------------------------------------------------------
FileNotFoundError                         Traceback (most recent call last)
<ipython-input-10-38b38ce083dc> in <module>
      1 # lander DDPG Million
      2 # Read in File as pandas dataframe
----> 3 file_data = pd.read_csv("lander/lander_ddpg_million.csv")
      4 lander_ddpg_million_df = pd.DataFrame(columns= file_data.iloc[0,:], dat
a=file_data.iloc[1:,].as_matrix())
      5 

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in parser_f(filepath_or_buffer, sep, delimiter, header, names, index_co
l, usecols, squeeze, prefix, mangle_dupe_cols, dtype, engine, converters, true_
values, false_values, skipinitialspace, skiprows, nrows, na_values, keep_defaul
t_na, na_filter, verbose, skip_blank_lines, parse_dates, infer_datetime_format,
keep_date_col, date_parser, dayfirst, iterator, chunksize, compression, thousan
ds, decimal, lineterminator, quotechar, quoting, escapechar, comment, encoding,
dialect, tupleize_cols, error_bad_lines, warn_bad_lines, skipfooter, doublequot
e, delim_whitespace, low_memory, memory_map, float_precision)
    676                     skip_blank_lines=skip_blank_lines)
    677 
--> 678         return _read(filepath_or_buffer, kwds)
    679 
    680     parser_f.__name__ = name

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _read(filepath_or_buffer, kwds)
    438 
    439     # Create the parser.
--> 440     parser = TextFileReader(filepath_or_buffer, **kwds)
    441 
    442     if chunksize or iterator:

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, f, engine, **kwds)
    785             self.options['has_index_names'] = kwds['has_index_names']
    786 
--> 787         self._make_engine(self.engine)
    788 
    789     def close(self):

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _make_engine(self, engine)
   1012     def _make_engine(self, engine='c'):
   1013         if engine == 'c':
-> 1014             self._engine = CParserWrapper(self.f, **self.options)
   1015         else:
   1016             if engine == 'python':

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, src, **kwds)
   1706         kwds['usecols'] = self.usecols
   1707 
-> 1708         self._reader = parsers.TextReader(src, **kwds)
   1709 
   1710         passed_names = self.names is None

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader.__cinit__()

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader._setup_parser_sourc
e()

FileNotFoundError: File b'lander/lander_ddpg_million.csv' does not exist
```

In [11]:

```
# lander DDPG 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ddpg_100000.csv")
lander_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_data.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_ddpg_100000_df.index.values)
y = pd.to_numeric(lander_ddpg_100000_df.l.values)
ax.set_title("lander DDPG 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x, y);
```

```
---------------------------------------------------------------------------
FileNotFoundError                         Traceback (most recent call last)
<ipython-input-11-9a17b11f981a> in <module>
      1 # lander DDPG 100000
      2 # Read in File as pandas dataframe
----> 3 file_data = pd.read_csv("lander/lander_ddpg_100000.csv")
      4 lander_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data
=file_data.iloc[1:,].as_matrix())
      5 

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in parser_f(filepath_or_buffer, sep, delimiter, header, names, index_co
l, usecols, squeeze, prefix, mangle_dupe_cols, dtype, engine, converters, true_
values, false_values, skipinitialspace, skiprows, nrows, na_values, keep_defaul
t_na, na_filter, verbose, skip_blank_lines, parse_dates, infer_datetime_format,
keep_date_col, date_parser, dayfirst, iterator, chunksize, compression, thousan
ds, decimal, lineterminator, quotechar, quoting, escapechar, comment, encoding,
dialect, tupleize_cols, error_bad_lines, warn_bad_lines, skipfooter, doublequot
e, delim_whitespace, low_memory, memory_map, float_precision)
    676                     skip_blank_lines=skip_blank_lines)
    677 
--> 678         return _read(filepath_or_buffer, kwds)
    679 
    680     parser_f.__name__ = name

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _read(filepath_or_buffer, kwds)
    438 
    439     # Create the parser.
--> 440     parser = TextFileReader(filepath_or_buffer, **kwds)
    441 
    442     if chunksize or iterator:

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, f, engine, **kwds)
    785             self.options['has_index_names'] = kwds['has_index_names']
    786 
--> 787         self._make_engine(self.engine)
    788 
    789     def close(self):

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in _make_engine(self, engine)
   1012     def _make_engine(self, engine='c'):
   1013         if engine == 'c':
-> 1014             self._engine = CParserWrapper(self.f, **self.options)
   1015         else:
   1016             if engine == 'python':

~/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/pandas/io/par
sers.py in __init__(self, src, **kwds)
   1706         kwds['usecols'] = self.usecols
   1707 
-> 1708         self._reader = parsers.TextReader(src, **kwds)
   1709 
   1710         passed_names = self.names is None

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader.__cinit__()

pandas/_libs/parsers.pyx in pandas._libs.parsers.TextReader._setup_parser_sourc
e()

FileNotFoundError: File b'lander/lander_ddpg_100000.csv' does not exist
```

In [12]:

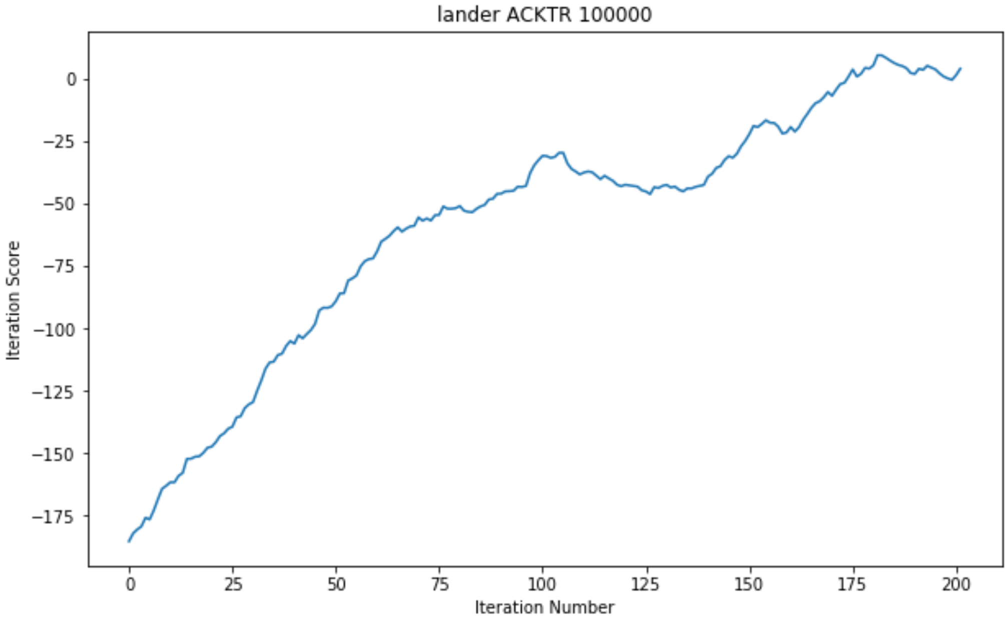
```
k = 100
y2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    y2.append(num/k)

# lander DDPG 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_ddpg_100000.csv")
lander_ddpg_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x2 = pd.to_numeric(lander_ddpg_100000_df.iloc[:-k].index.values)
#y = pd.to_numeric(lander_ddpg_100000_df.l.values)
ax.set_title("lander DDPG 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
ax.plot(x2, y2);
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-12-60e474a6550e> in <module>
      2 k = 100
      3 y2 = []
----> 4 for i in range(len(y) - k):
      5     num = 0
      6     for j in range(k):

NameError: name 'y' is not defined
```

In [13]:

```
# lander ACKTR 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_acktr_100000.csv", index_col = False)
lander_acktr_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_acktr_100000_df.index.values)
y = pd.to_numeric(lander_acktr_100000_df.r.values)
ax.set_title("lander ACKTR 100000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x, y);

acktr_hy2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    acktr_hy2.append(num/k)

ax.plot(x[:-k], acktr_hy2);
```

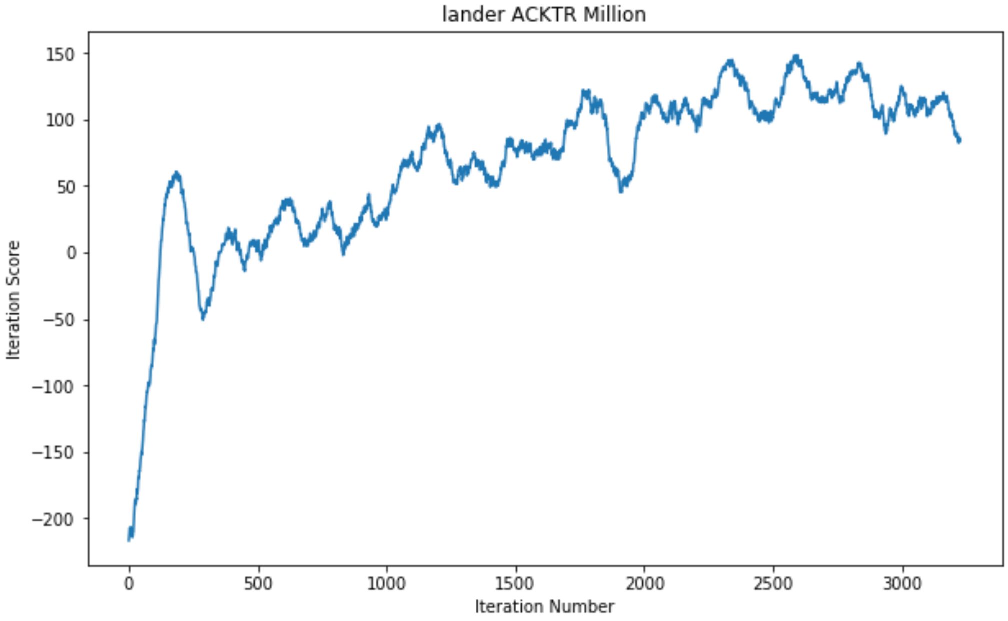
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [14]:

```
# lander ACKTR MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_acktr_million.csv",index_col=False)
lander_acktr_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_
data.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_acktr_million_df.index.values)
y = pd.to_numeric(lander_acktr_million_df.r.values)
ax.set_title("lander ACKTR Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x, y);

k = 100

acktr_my2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    acktr_my2.append(num/k)

ax.plot(x[:-k], acktr_my2);
#file_data.iloc[0,:].values
```

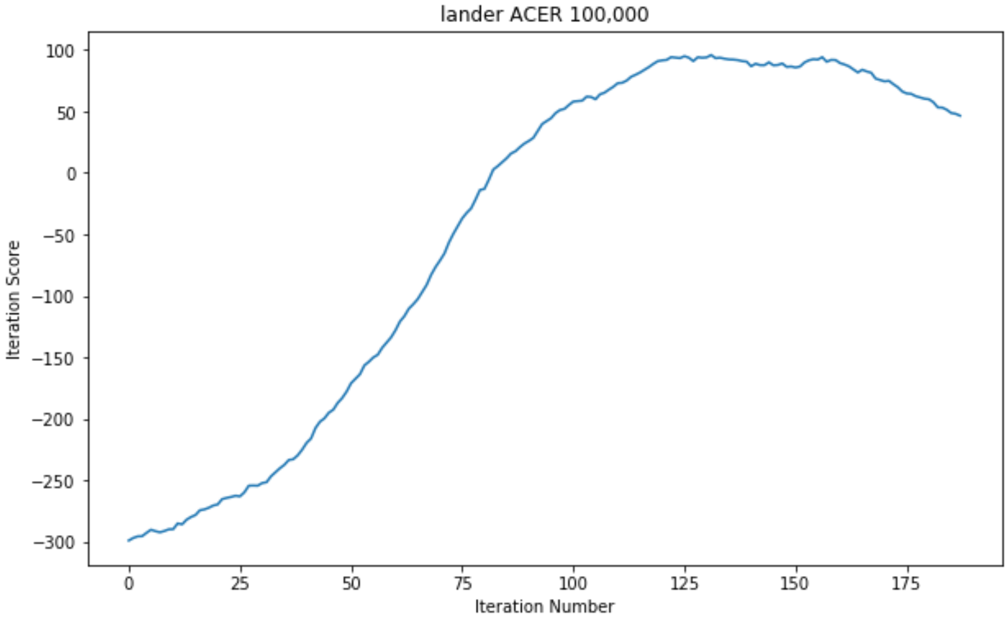
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [15]:

```
# lander ACER 100000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_acer_100000.csv", index_col=False)
lander_acer_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_acer_100000_df.index.values)
y = pd.to_numeric(lander_acer_100000_df.r.values)
ax.set_title("lander ACER 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")

k = 100

acer_hy2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    acer_hy2.append(num/k)

ax.plot(x[:-k], acer_hy2);
```

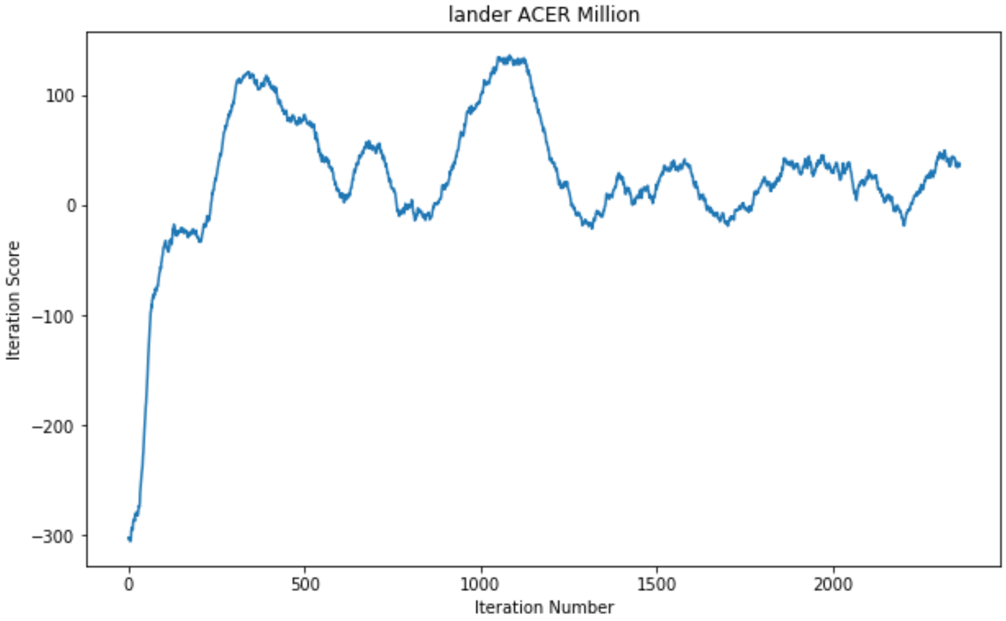
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [16]:

```
# lander ACER MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_acer_million.csv", index_col=False)
lander_acer_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_acer_million_df.index.values)
y = pd.to_numeric(lander_acer_million_df.r.values)
ax.set_title("lander ACER Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x, y);

acer_my2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    acer_my2.append(num/k)

ax.plot(x[:-k], acer_my2);
```

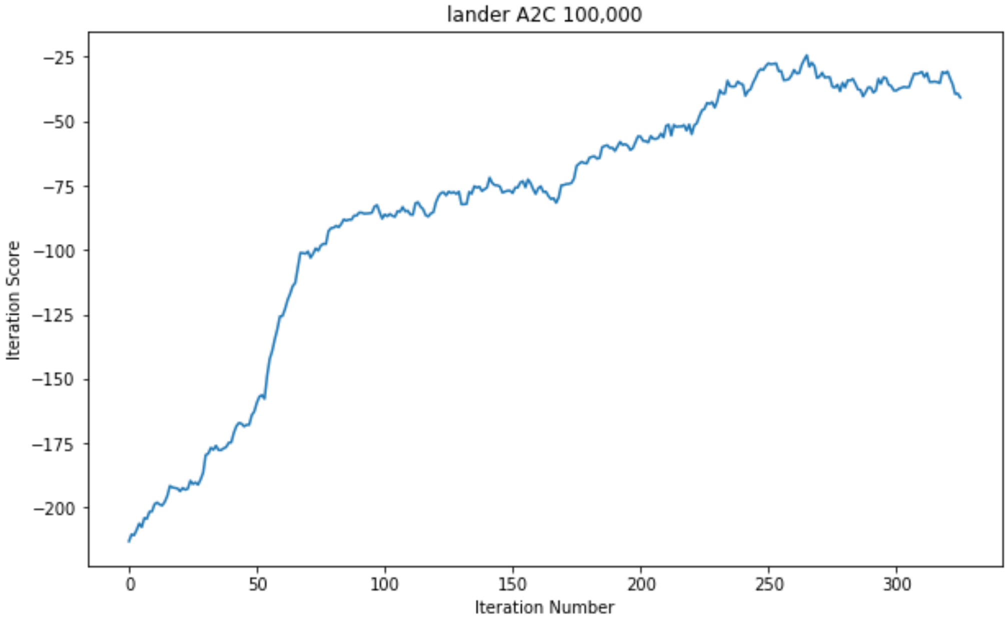
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:6: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
```



In [17]:

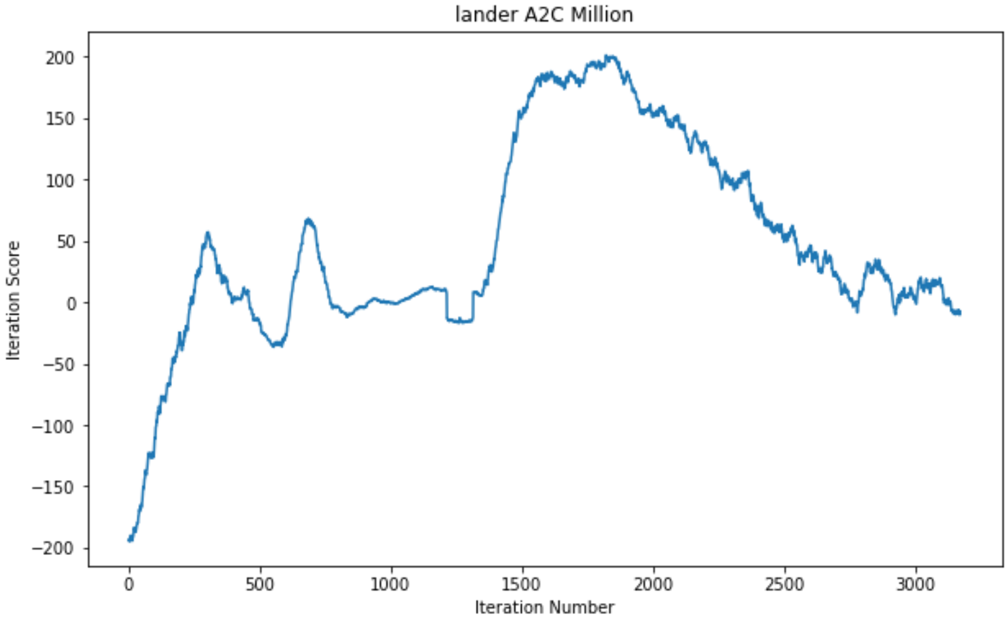
```
# lander A2C 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_a2c_100000.csv", index_col=False)
lander_a2c_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_dat
a.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_a2c_100000_df.index.values)
y = pd.to_numeric(lander_a2c_100000_df.r.values)
ax.set_title("lander A2C 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x, y);

a2c_hy2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    a2c_hy2.append(num/k)

ax.plot(x[:-k], a2c_hy2);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



```
In [18]: # lander A2C MILLION
         # Read in File as pandas dataframe
         file_data = pd.read_csv("lander/lander_a2c_million.csv", index_col=False)
         lander_a2c_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
         ta.iloc[1:,].as_matrix())

         #PLOTTING
         fig, ax = plt.subplots(1,1, figsize=(10,6))
         x = pd.to_numeric(lander_a2c_million_df.index.values)
         y = pd.to_numeric(lander_a2c_million_df.r.values)
         ax.set_title("lander A2C Million")
         ax.set_xlabel("Iteration Number")
         ax.set_ylabel("Iteration Score")
         #ax.plot(x, y);

         a2c_my2 = []
         for i in range(len(y) - k):
             num = 0
             for j in range(k):
                 num += y[i+j]
             a2c_my2.append(num/k)

         ax.plot(x[:-k], a2c_my2);
```

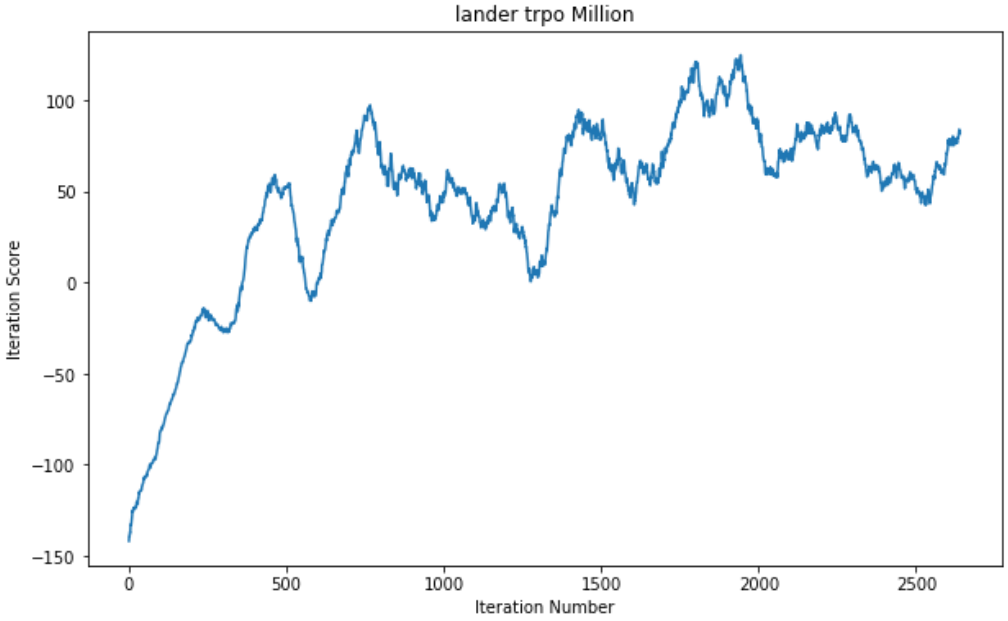
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [19]:

```
# lander trpo MILLION
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_trpo_million.csv", index_col=False)
lander_trpo_million_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_d
ata.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_trpo_million_df.index.values)
y = pd.to_numeric(lander_trpo_million_df.r.values)
ax.set_title("lander trpo Million")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x, y);

trpo_my2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    trpo_my2.append(num/k)

ax.plot(x[:-k], trpo_my2);
```

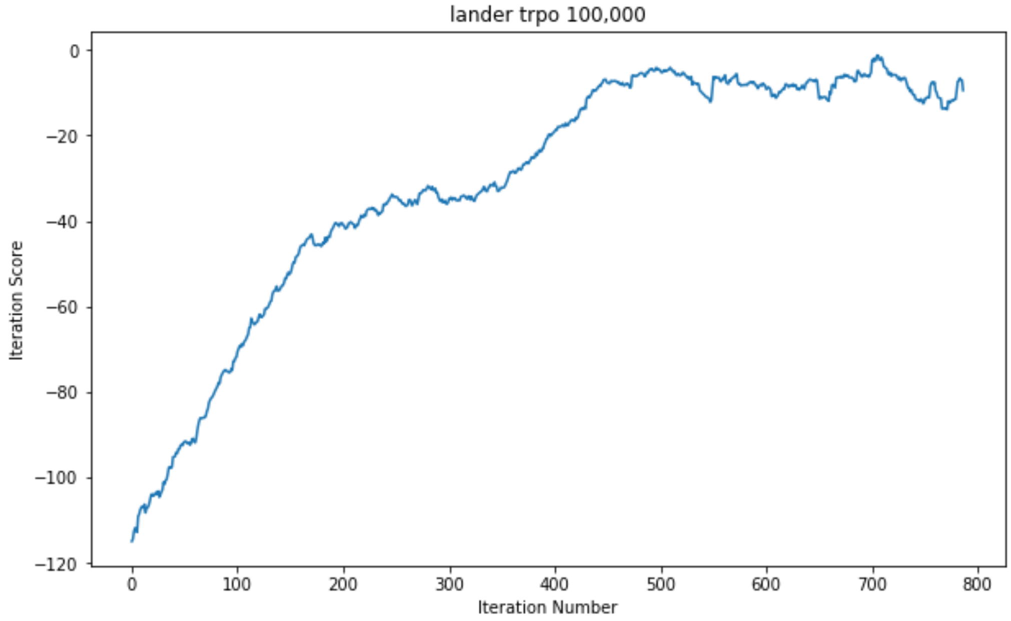
```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [20]:

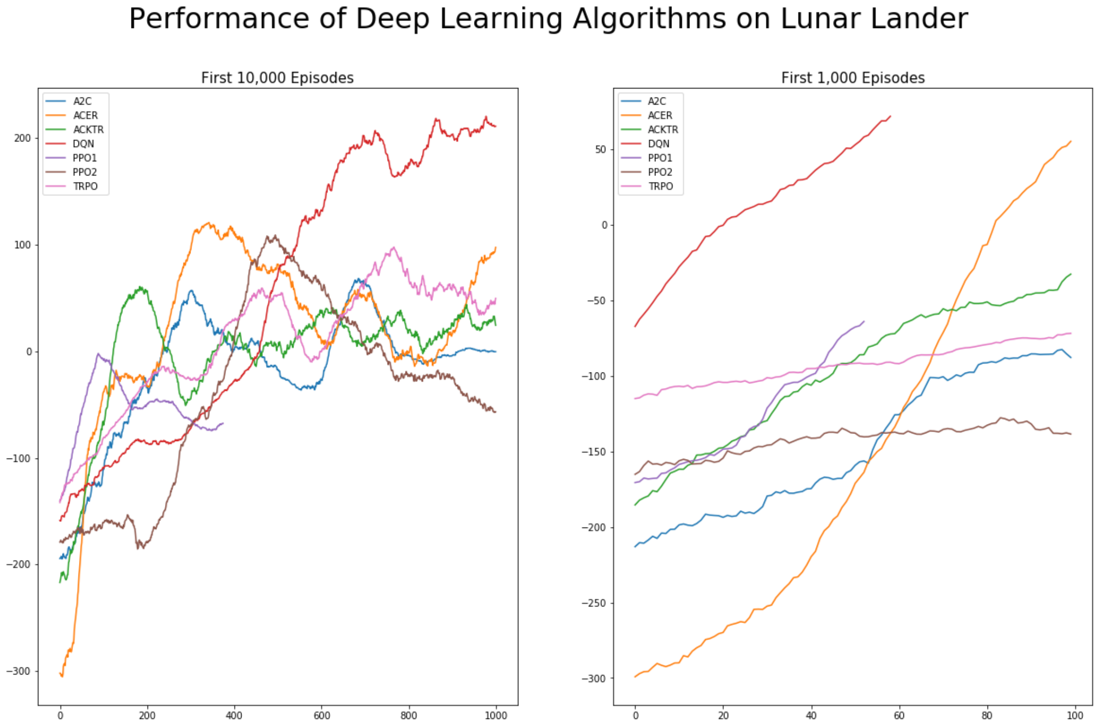
```
# lander trpo 100,000
# Read in File as pandas dataframe
file_data = pd.read_csv("lander/lander_trpo_100000.csv", index_col=False)
lander_trpo_100000_df = pd.DataFrame(columns= file_data.iloc[0,:], data=file_da
ta.iloc[1:,].as_matrix())

#PLOTTING
fig, ax = plt.subplots(1,1, figsize=(10,6))
x = pd.to_numeric(lander_trpo_100000_df.index.values)
y = pd.to_numeric(lander_trpo_100000_df.r.values)
ax.set_title("lander trpo 100,000")
ax.set_xlabel("Iteration Number")
ax.set_ylabel("Iteration Score")
#ax.plot(x, y);

trpo_hy2 = []
for i in range(len(y) - k):
    num = 0
    for j in range(k):
        num += y[i+j]
    trpo_hy2.append(num/k)

ax.plot(x[:-k], trpo_hy2);
```

```
/home/mkolor/jupyter_nb_directory/jupyter_nb_env/lib/python3.6/site-packages/ip
ykernel_launcher.py:4: FutureWarning: Method .as_matrix will be removed in a fu
ture version. Use .values instead.
  after removing the cwd from sys.path.
```



In [25]:

```
fig_t, ax_t = plt.subplots(1,2,figsize=(20,12))

# MAYBE CHANGE K FOR 100,000

# A2C
ax_t[0].plot(x_m[:1000], a2c_my2[:1000], label="A2C");
ax_t[1].plot(x_h[:100], a2c_hy2[:100], label="A2C");

# ACER
ax_t[0].plot(x_m[:1000], acer_my2[:1000], label="ACER");
ax_t[1].plot(x_h[:100], acer_hy2[:100], label="ACER");

# ACKTR
ax_t[0].plot(x_m[:1000], acktr_my2[:1000], label="ACKTR");
ax_t[1].plot(x_h[:100], acktr_hy2[:100], label="ACKTR");


# DQN
ax_t[0].plot(x_m[:1000], dqn_my2[:1000], label="DQN");
ax_t[1].plot(x_h[:59], dqn_hy2[:59], label="DQN");

# PPO1
ax_t[0].plot(x_m[:375], ppo1_my2[:375], label="PPO1");
ax_t[1].plot(x_h[:53], ppo1_hy2[:53], label="PPO1");

# PPO2
ax_t[0].plot(x_m[:1000], ppo2_my2[:1000], label="PPO2");
ax_t[1].plot(x_h[:100], ppo2_hy2[:100], label="PPO2");

# TRPO
ax_t[0].plot(x_m[:1000], trpo_my2[:1000], label="TRPO");
ax_t[1].plot(x_h[:100], trpo_hy2[:100], label="TRPO");

# MAYBE CHANGE K FOR 100,000

ax_t[0].legend();
ax_t[1].legend();

fig_t.suptitle("Performance of Deep Learning Algorithms on Lunar Lander", fonts
ize=30);
ax_t[0].set_title("First 10,000 Episodes",fontsize=15)
ax_t[1].set_title("First 1,000 Episodes", fontsize=15);
```


Performance of Deep Learning Algorithms on Lunar Lander
First 10,000 Episodes
A2C
ACER
ACKTR
DQN
PPO1
PPO2
TRPO
200
100
0
−100
−200
−300
0
200
400
600
800
1000
First 1,000 Episodes
A2C
ACER
ACKTR
DQN
PPO1
PPO2
TRPO
50
0
−50
−100
−150
−200
−250
−300
0
20
40
60
80
100

In [ ]:

In [ ]: