

plotter

March 26, 2023

```
[ ]: import matplotlib.pyplot as plt
      from mpl_toolkits import mplot3d
      from scipy.interpolate import make_interp_spline
      import pandas as pd
      import numpy as np
```

```
[ ]: transmission_pkt_size = pd.read_csv('itr_packet_size_log.csv')
      transmission_log_size = pd.read_csv('itr_prob_log.csv')
      transmission_pkt_file = pd.read_csv('itr_packet_size_file_size_log.csv')
      transmission_file_size = pd.read_csv('itr_file_size_log.csv')
```

```
[ ]: x = np.array(transmission_log_size['ERROR_PROBABILITY'])
      y = np.array(transmission_log_size['TRANSMISSIONS'])
```

```
# take 95 percent of the data to elim outliers
```

```
x = x[:int(len(x)*0.95)]
```

```
y = y[:int(len(y)*0.95)]
```

```
# Plotting the Graph
```

```
plt.plot(x, y)
```

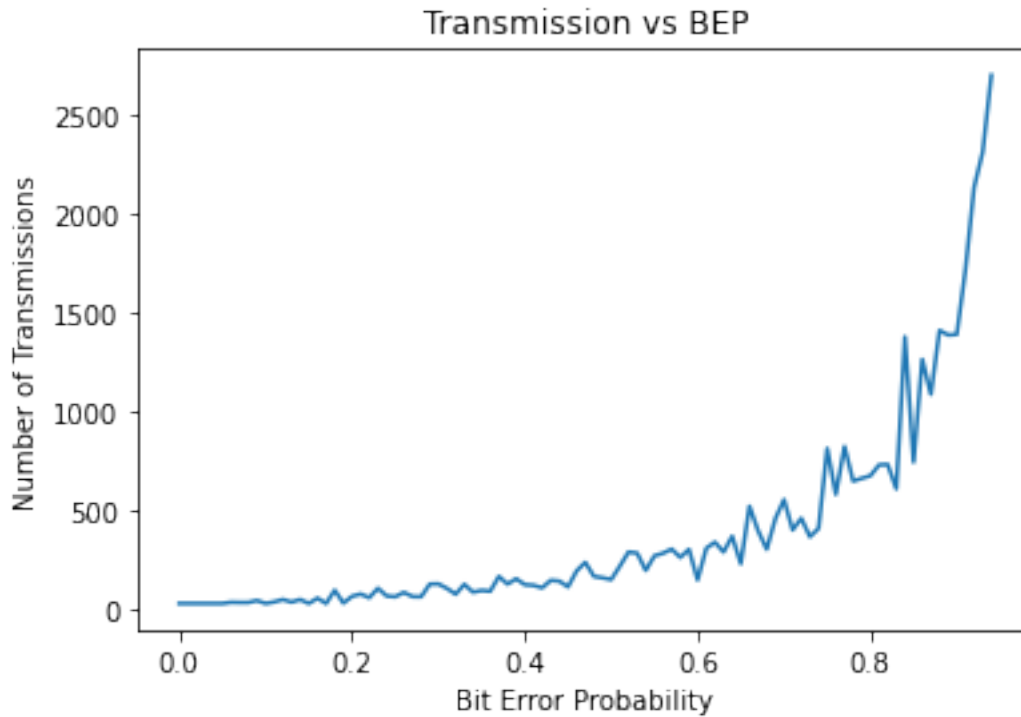
```
#increase area
```

```
plt.xlabel('Bit Error Probability')
```

```
plt.ylabel('Number of Transmissions')
```

```
plt.title('Transmission vs BEP')
```

```
plt.show()
```



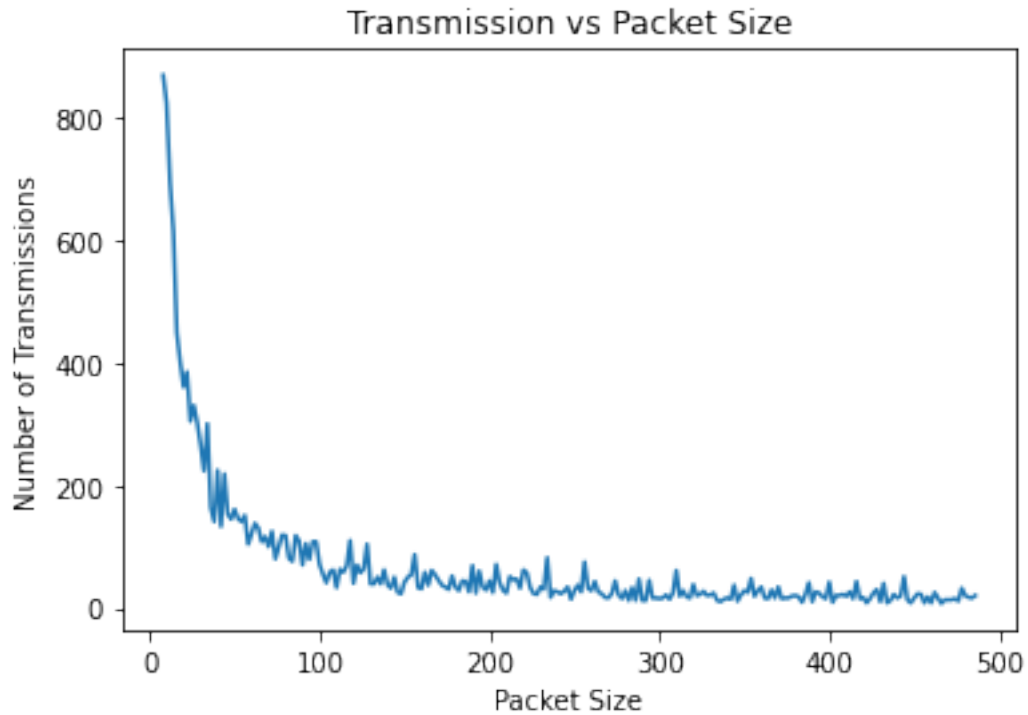
```
[ ]: # Plot the transmission versus packet size graph
x = np.array(transmission_pkt_size['PACKET_SIZE'])
y = np.array(transmission_pkt_size['TRANSMISSIONS'])

# take 95% of the data to eliminate outliers
x = x[:int(len(x)*0.95)]
y = y[:int(len(y)*0.95)]

# Plotting the Graph
plt.plot(x, y)

plt.xlabel('Packet Size')
plt.ylabel('Number of Transmissions')
plt.title('Transmission vs Packet Size')

plt.show()
```



```
[ ]: x = np.array(transmission_file_size['FILE_SIZE'])
y = np.array(transmission_file_size['TRANSMISSIONS'])

# take 95 percent of the data to elim outliers

x = x[:int(len(x)*0.95)]
y = y[:int(len(y)*0.95)]

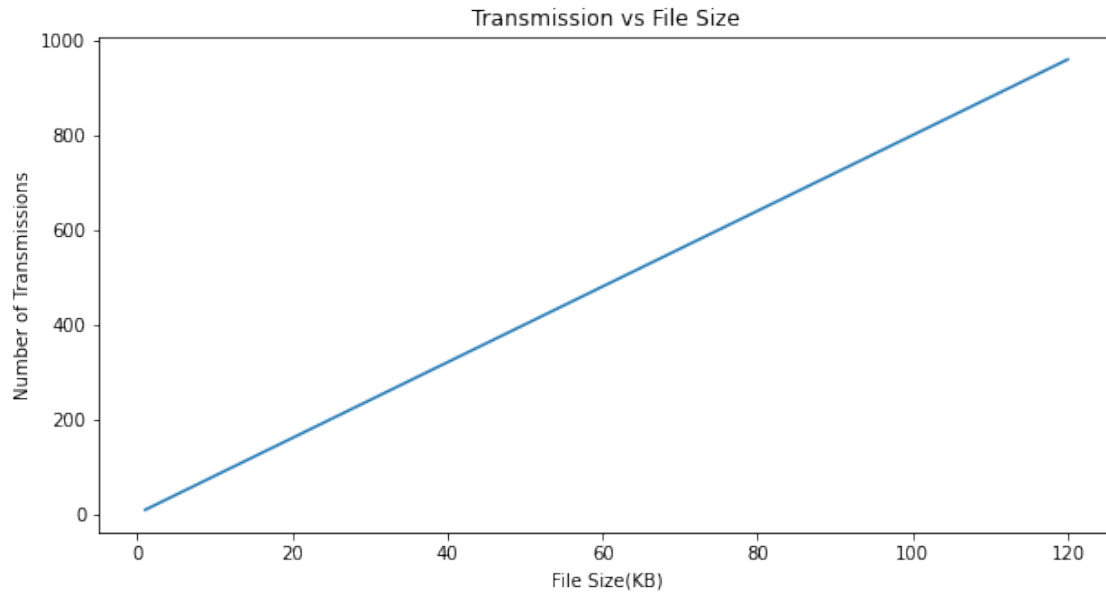
# Plotting the Graph

#increase area
plt.figure(figsize=(10, 5))

plt.plot(x, y)

plt.xlabel('File Size(KB)')
plt.ylabel('Number of Transmissions')
plt.title('Transmission vs File Size')

plt.show()
```



```
[ ]: %matplotlib inline
fig = plt.figure()
ax = plt.axes(projection='3d')

x = np.array(transmission_pkt_file['PACKET_SIZE'])
y = np.array(transmission_pkt_file['FILE_SIZE'])
z = np.array(transmission_pkt_file['TRANSMISSIONS'])

# take 95 percent of the data to elim outliers
# x = x[:int(len(x)*0.95)]
# y = y[:int(len(y)*0.95)]
# z = z[:int(len(z)*0.95)]

# multiply y from KB to B
y = y * 1024

#increase area
fig.set_size_inches(18.5, 10.5)

#plot a surface
ax.plot_trisurf(x, y, z, cmap='viridis', edgecolor='none')

ax.set_xlabel('Packet Size')

ax.set_ylabel('File Size')

ax.set_zlabel('Number of Transmissions')
```

```
ax.set_title('Transmission vs Packet Size vs File Size')  
plt.show()
```

Transmission vs Packet Size vs File Size

