EE 315 PROJECT PRESENTATION

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PROJECT OUTLINE

- Project objectives

- Data collecting

  - Methdology

- Results

  - Histogram
  - Plots of Wifi – 3G – 4G
  - Matlab results (mean, STD, … etc)

- Pdf fitting

- Data mapping

- Conclusion

PROJECT OBJECTIVES

- To measure download speeds through several internet access technologies (WiFi, 3G and 4G) in different times, days and locations.

- To analyze the collected data using Matlab.

- To decide which pdf describe the behavior of the download speed.

- To map the results on a local map showing the average download speeds.

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DATA COLLECTING

- **Methdology**

RESULTS

| Day	Time	Download speed WI-FI	Download speed 3G	Download speed 4G
Thursday 6-Nov	10:00AM	7.72	1.66	6.18
	4:00PM	7.5	3.80	12.85
	10:00PM	7.9	0.86	8.09
Friday 7-Nov	10:00AM	7.82	2.54	16.84
	4:00PM	7.84	1.98	15.72
	10:00PM	7.89	1.44	9.01
Saturday 8-Nov	10:00AM	7.71	1.65	9.61
	4:00PM	8.05	1.37	9.16
	10:00PM	7.78	2.12	12.65
Sunday 9-Nov	10:00AM	7.93	1.03	9.2
	4:00PM	7.73	1.30	12.87
	10:00PM	7.67	1.10	12.99
Monday 10-Nov	10:00AM	7.84	1.03	11.42
	4:00PM	7.76	1.87	9.62
	10:00PM	7.75	2.54	18.56
Tuesday 11-Nov	10:00AM	7.53	4.09	11.01
	4:00PM	7.71	2.40	9.55
	10:00PM	7.67	2.54	18.33

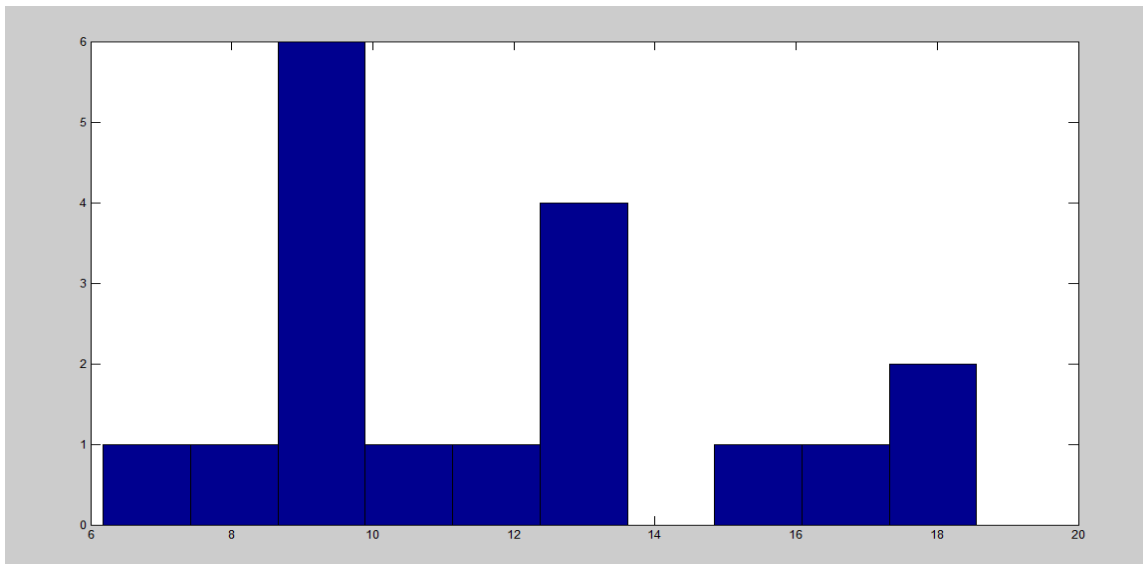# RESULTS
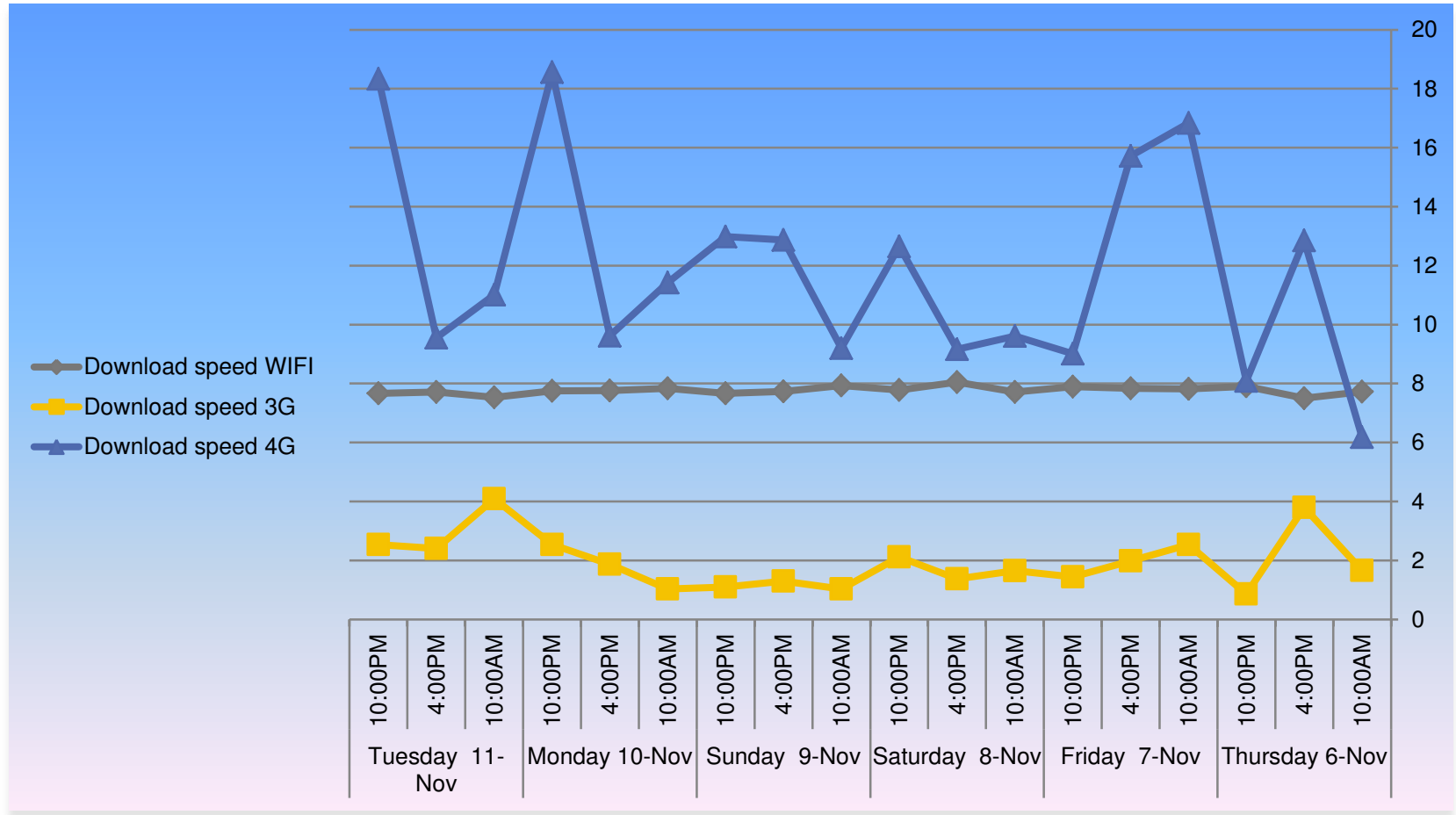
RESULTS

- Histogram
- Plots of Wifi – 3G – 4G
- Matlab results (mean, STD, … etc)
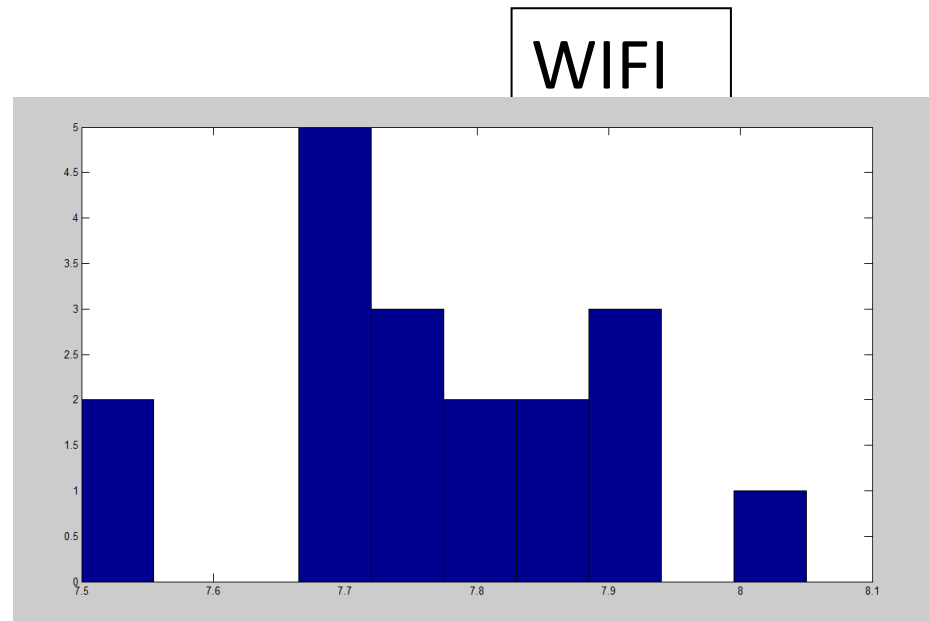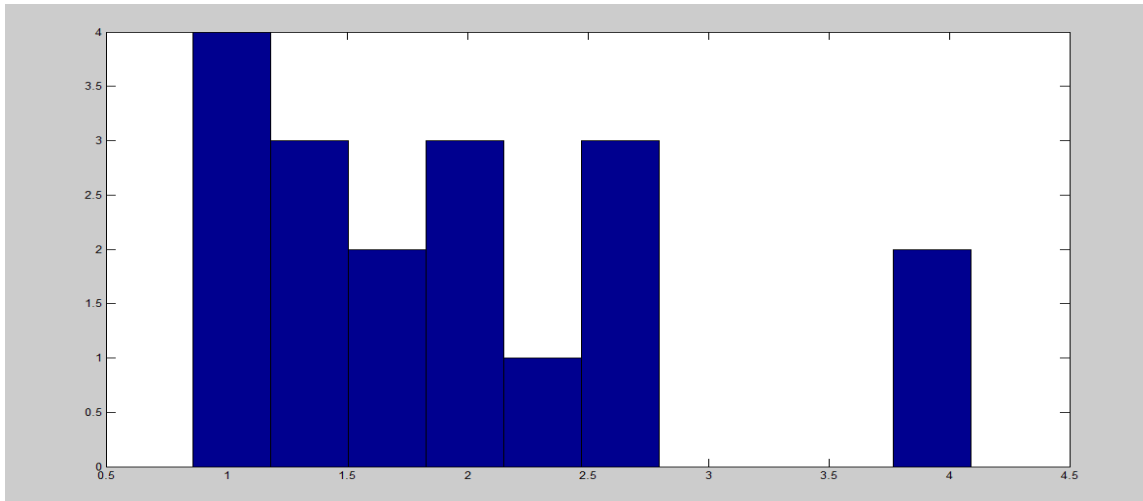
WIFI

RESULTS

3G

4G

RESULTS

mean_wifi =	variance_wifi =	correlation_coefficient_Wifi =
7.7667	0.0182	1
mean_3G =	variance_3G =	correlation_coefficient_3G =
1.9622	0.8282	1
mean_4G =	variance_4G =	correlation_coefficient_4G =
11.8700	12.6851	1

RESULTS

```
correlation_coefficient_Wifi_3G =

      1.0000    -0.7228
     -0.7228     1.0000


correlation_coefficient_Wifi_4G =

       1


correlation_coefficient_3G_4G =

       1
```
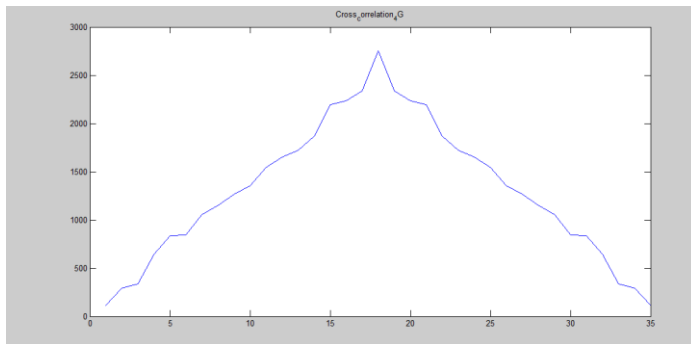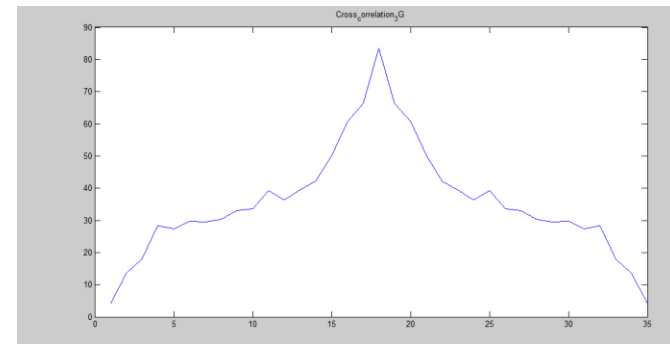
RESULTS

Cross correlation Wifi (The Code (xcorr(w)))
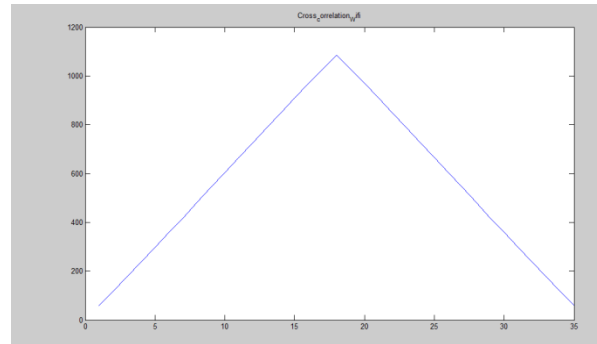
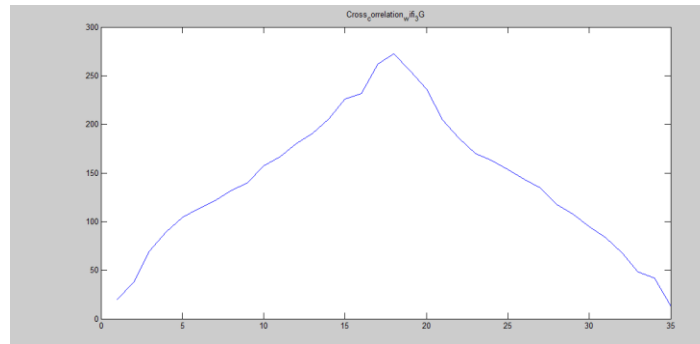**Cross correlation 4G (The Code (xcorr(fg)))**

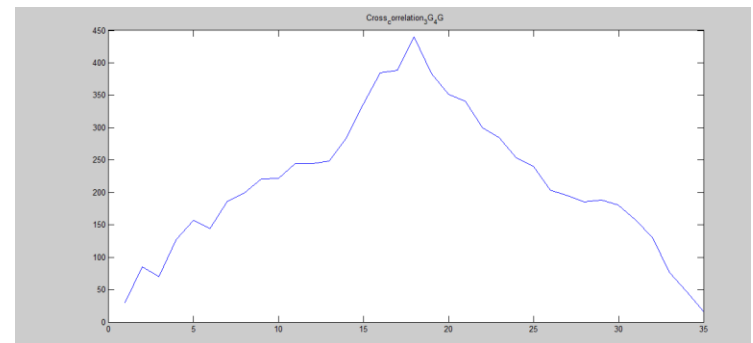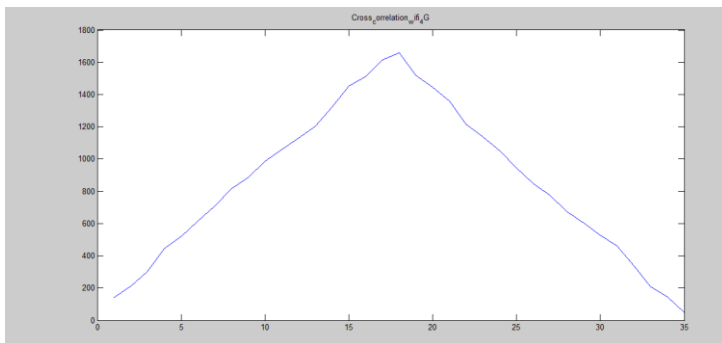**Cross correlation 3G (The Code (xcorr(g)))**

RESULTS

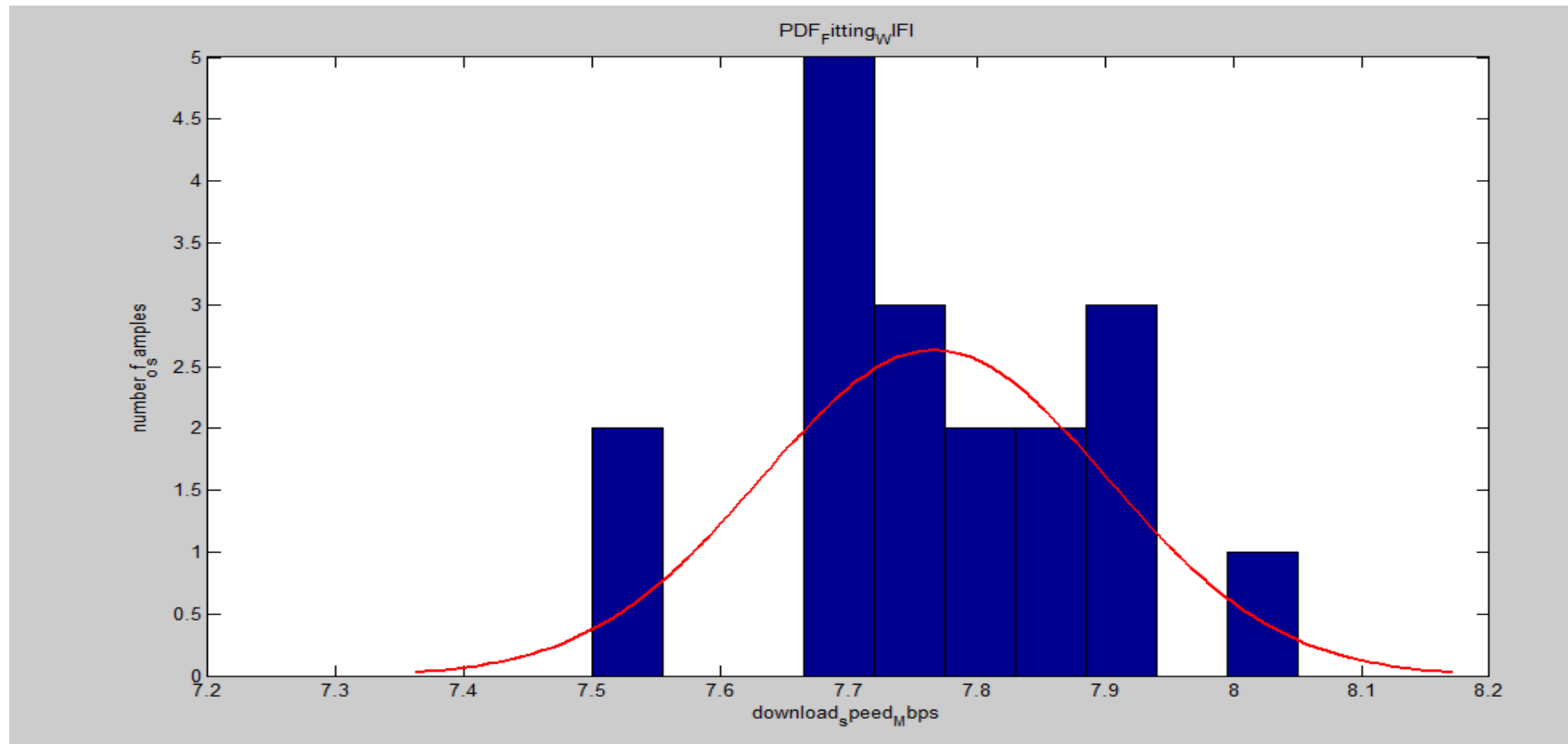**Cross correlation Wifi 3G (The Code (xcorr(w,g)))**

Cross correlation Wifi 4G (The Code (xcorr(w,fg)))
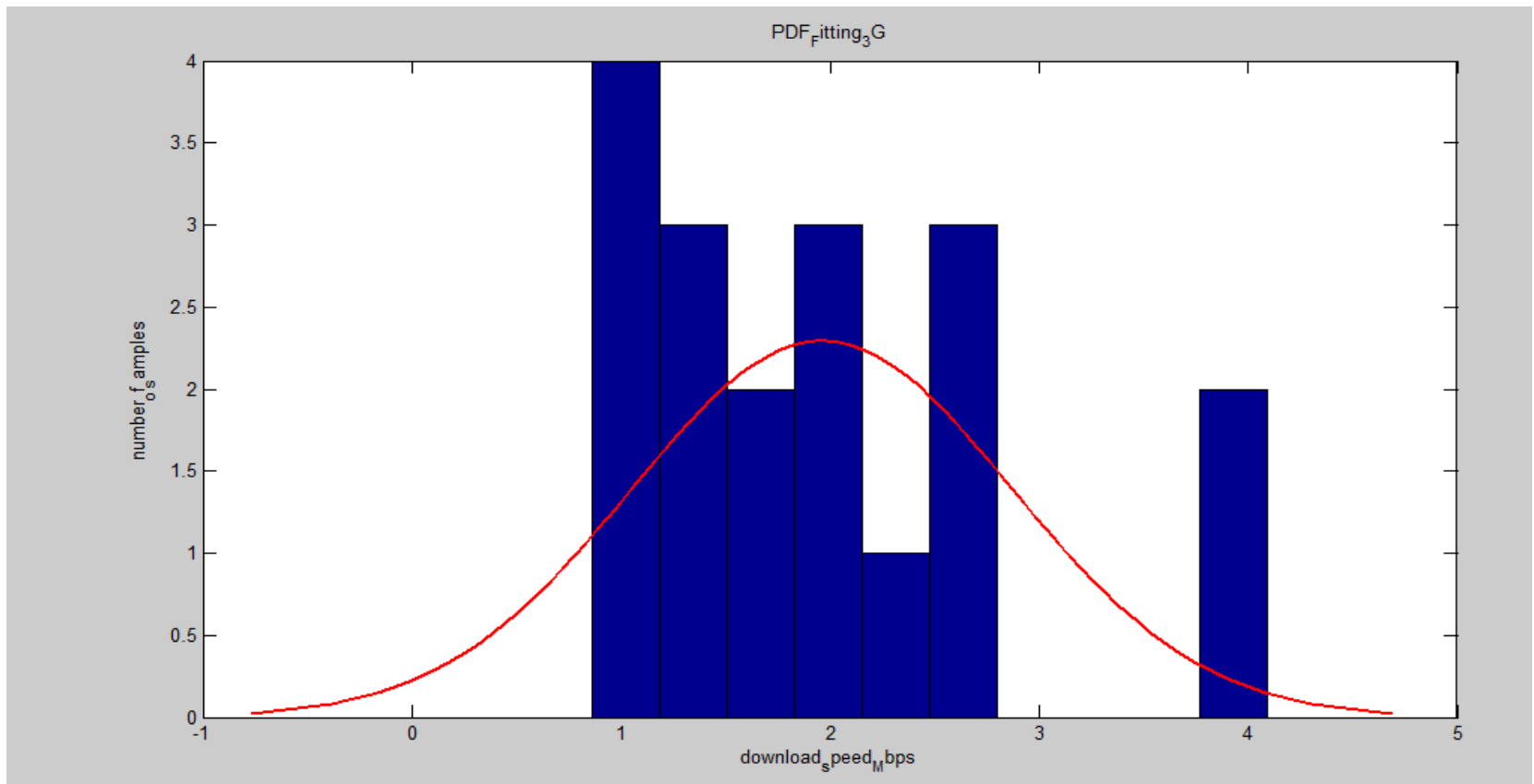

Cross correlation 3G 4G (The Code (xcorr(g,fg)))
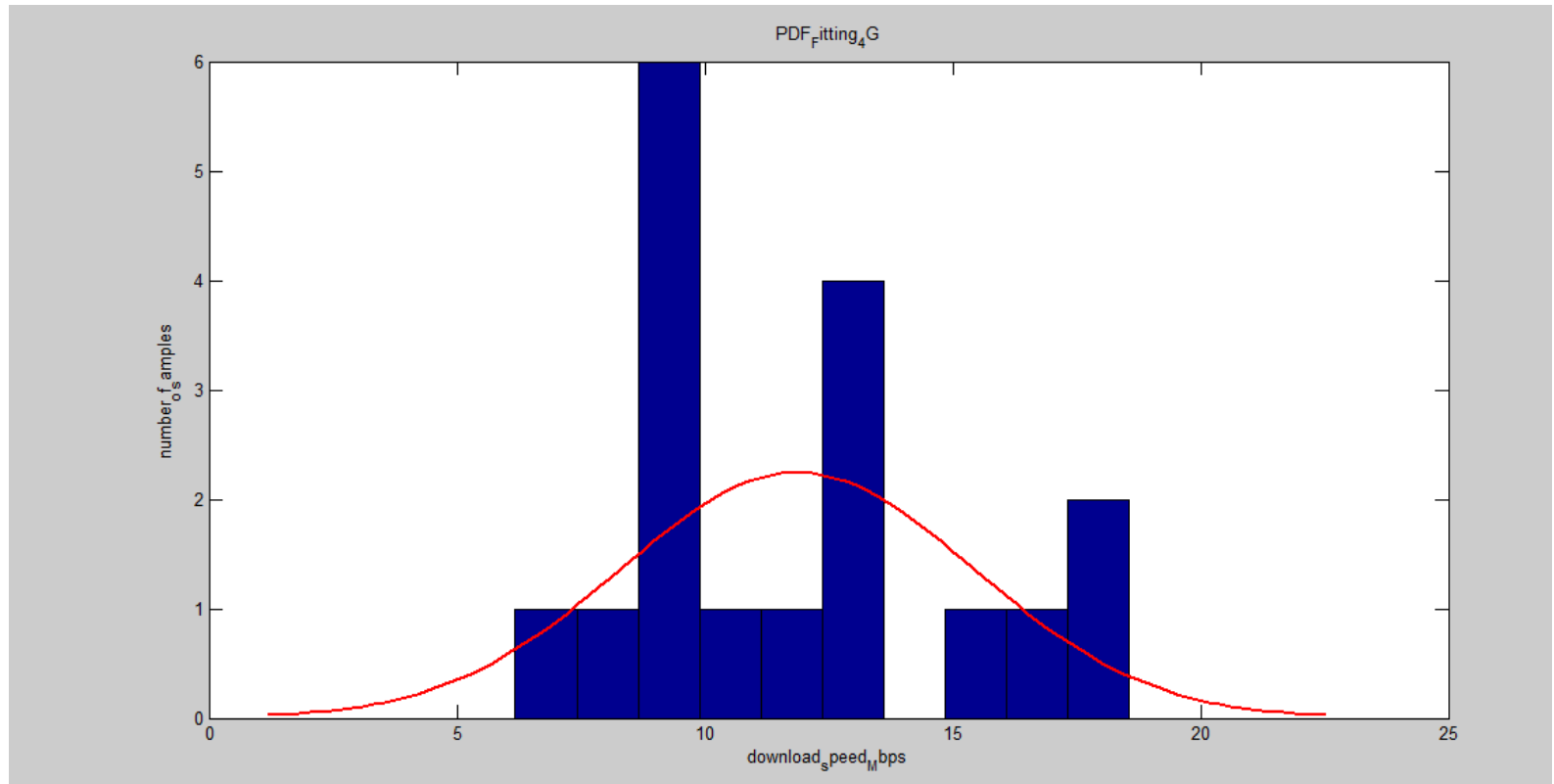
PDF FITTING

Wifi *pdf* Fitting

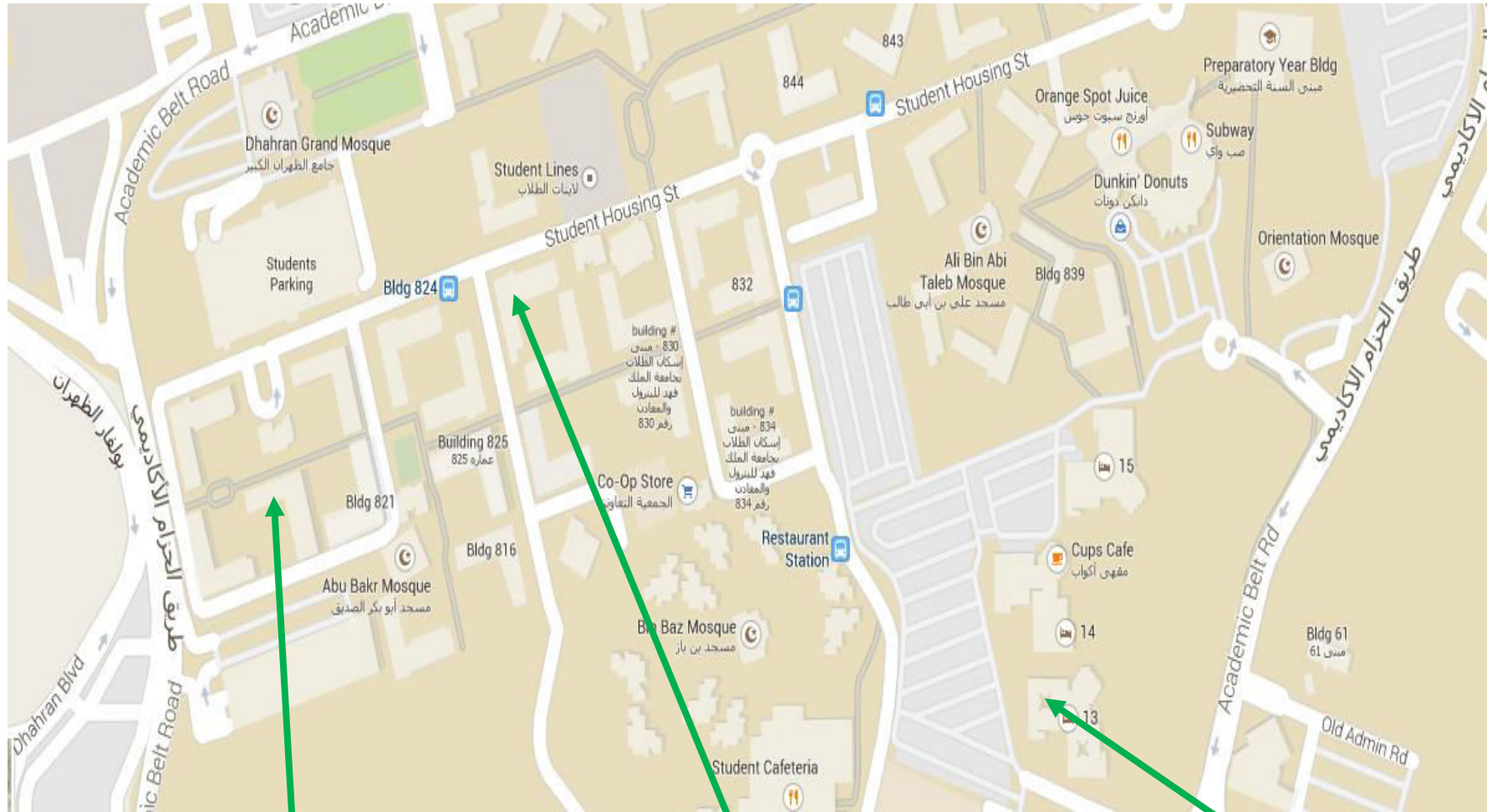# PDF FITTING

3G pdf Fitting

PDF FITTING

4G pdf Fitting

DATA MAPPING

4G data (18 samples)
3 samples per day
(10AM – 4PM – 10Pm)

3G data (18 samples)
3 samples per day
(10AM – 4PM – 10Pm)

Wifi data (18 samples)
3 samples per day
(10AM – 4PM – 10Pm)

CONCLUSION

We measured downloads speeds through three internet access technology (KFUPM Wi-Fi , 3G and 4G mobile data) . We repeated the measurements for three times per a day along 6 days in three different places . After collecting our data, we used Matlab to calculate and plot several functions using the data . We used the code (histfit()) to decide which of the pdf function is fit with the behavior and our result is Gaussian pdf . Furthermore , we mapped the results in Goggle Map for KFUPM campus .