

# Privacy and Security in Online Social Media

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Course on NPTEL

NOC21-CS28

Week 6.1

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# Topics that we will cover

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- Overview of OSM
- Linux / Python / Twitter API / Mongo DB / MySQL  
[Hands-on]
- Trust & Credibility
- Privacy
- **Policing**
- Social Network Analysis, NLTK [Hands-on]
- e-crime
- Plotly / Highcharts / Geo-location analysis  
[Hands-on]
- Identity resolution
- What next – Deep learning, machine learning, NLP, Image analysis

# Multiple Police Dept. on OSN



The image shows the Facebook profile of the Delhi Traffic Police, a Government Organization. The profile picture is the official Delhi Police emblem. The cover photo features a group of officials at a 'DELHI POLICE WEEK ROAD SAFETY COMMEMORATIVE FUNCTION' on 28th February 2015. The profile has 205k likes and 651 check-ins. The left sidebar includes a 'Timeline' tab and a 'More' dropdown. The main content area shows a 'Write something...' text box and a 'Post' button.

**Delhi Traffic Police**  
Government Organization

Timeline About Extended Info Likes More ▾

205k people like this  
Raghav Zutshi Anand and 46 other friends

651 people have been here

Open always  
Get additional info

Post Photo / Video

Write something...

Post



The image shows the Facebook profile of the Hyderabad City Police, a Government Organization. The profile picture is the official Hyderabad City Police emblem. The cover photo features the text 'Freedom From Fear Forever'. The profile has 21k likes and 247 check-ins. The left sidebar includes a 'Timeline' tab and a 'More' dropdown. The main content area shows a post from 'Hyderabad City Police' made 11 hours ago, which is currently blacked out.

**Hyderabad City Police**  
Government Organization

Freedom From Fear Forever

Timeline About Our Vision Win a Cash Reward More ▾

21k people like this

247 people have been here

Open always  
Get additional info

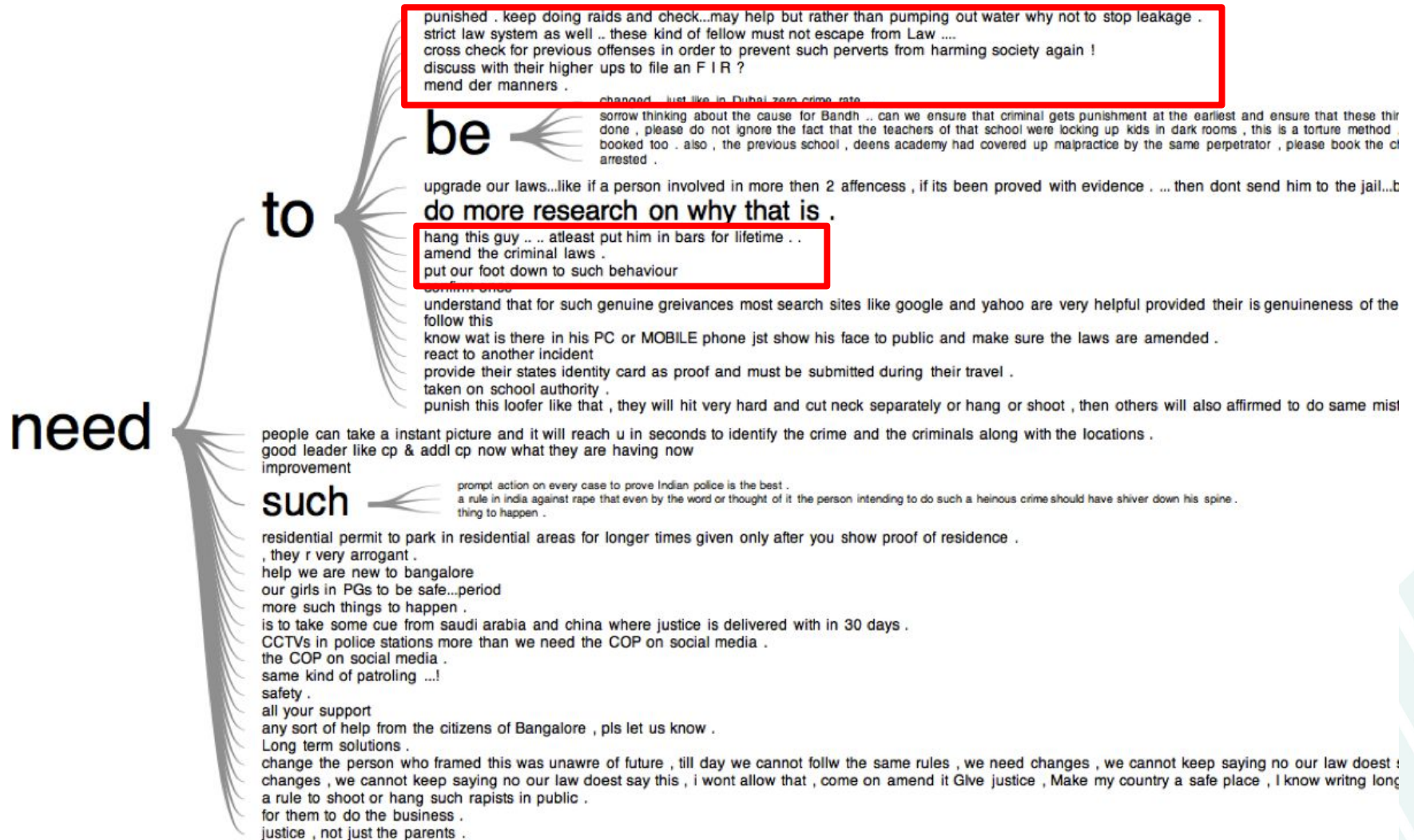
Hyderabad City Police  
11 hrs · 🌐

# Objective of Study

*Whether OSN can support police to get actionable information about crime and residents' opinion about policing activities in urban cities of India.*

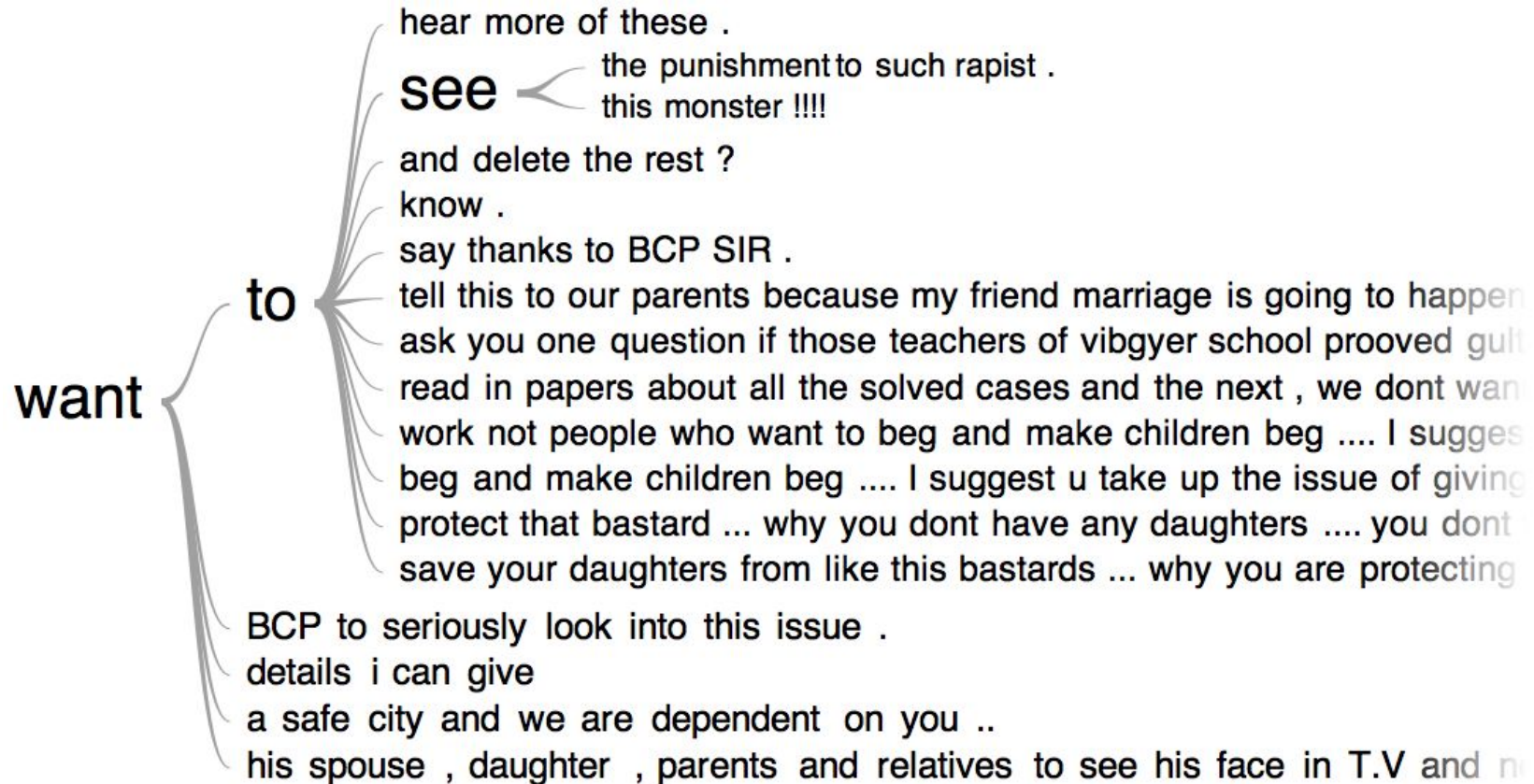


# Understanding Needs





# Understanding Wants



# Research Questions

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## ● *RQ 1: Topical Characteristics*

- Nature of content and topics that characterize social media discussion threads

## ● *RQ 2: Engagement Characteristics*

- How do citizens and police engage in social media discussion threads?

## ● *RQ 3: Emotional Exchanges*

- Nature of emotions and affective expression that manifest on social media


## ● *RQ 4: Cognitive and Social Orientation*

- What are the linguistic attributes that characterize cognitive and social response processes?

# Methodology

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85 Public and official Police Department



Average age 3 years (from 2010 – April 2015)



47,474 wall posts and 85,408 status updates



# Technological Implications

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- Helping communities to make consensus based decisions regarding support and actions they seek from police
- Help gauge changing emotions and behaviour among citizens
  - Timely and early predictive analytical systems
- Sense and record the reactions of citizens and share these records with decision makers
  - Take timely measures and gain better insights

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- Policing
- Social Network Analysis, NLTK [Hands-on]
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[Hands-on]
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# Different crimes on OSM

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- Phishing
- Fake X
- Social reputation: Fake followers / Crowdturfing
- Clickbaiting
- Account compromise
- Account impersonation
- Work from home scam
- ...

# Phishing

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- Act of tricking someone into handing over her login credentials in order to exploit personal information



# Phishing

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- Facebook Technical Support sent you a notification
- Facebook new login system
- .....
- Facebook credentials being important now!

# Fake customer service accounts

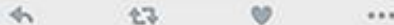
PROOFPOINT



Charlee · 6h

everytime I've been on my banks website lately, it's not been working. Frustrating

@Ask



A real customer tweets at a major bank.

In reply to



Instant

· 6m

@TheUsualStudio Dear Charlee, We sincerely apologize for this. Log into your account via our secure sign on channel

Fraudsters intercept the tweet with a link to a fake support site that tries to steal her actual bank account credentials.



# Fake comments on popular posts



**Salahdin Mrabit**

Comment at 12/20/15 9:50:37 AM

Links: <http://9879846548.blogspot.com/2015/12/Insurance.html>



<http://goo.gl/OjiCvo>

[\(http://9879846548.blogspot.com/2015/12/Insurance.html\)](http://9879846548.blogspot.com/2015/12/Insurance.html)   New Nicki

Minaj Scandal and Sexy Tape Video Leaked

[See less](#)

[View on Facebook](#) | Posted via: Web | Deleted

Scammers often pretend to be Facebook users so they can comment on posts that lead to a credit card phish.

# Fake live streaming videos



Here's a comment that an online thief posted on the Facebook page of an NBA team that promises a live-stream of a game.


# Fake online discounts



The image shows a screenshot of a Twitter profile for a fake account named "Netflix". The profile picture is a red square with the word "NETFLIX" in white. The header features the word "NETFLIX" in large, white, 3D block letters on a red background. Below the header, the profile name is "Netflix" with the handle "@NetflixSeller". The bio says "Buy your Netflix accounts for cheap!" and the website is "Q Netflix". The account has 2 tweets and 26 followers. A tweet from "Netflix" (@NetflixSeller) dated 27 Aug 2014 is visible, containing a link to "fiverr.com/casper10/give-..." and the text "Lifetime Netflix Premium Account for only \$5! #Netflix #Premium #Account #Cheap #Lifetime #Movies #TVShows #Streaming". A "Follow" button is visible. On the right side, there is a "New to Twitter?" sign-up prompt. The text "PROOFPOINT" is visible vertically on the right edge of the screenshot.

Fraudsters create fake social media accounts for real businesses like Netflix to carry out financial phishing scams.

# Fake online surveys and contests



The image shows a screenshot of a Facebook interface. On the left is a post from CNN, dated April 13 at 3:41pm, with the text: "Unnamed Russian fighter jets made two extremely close overflights this week of the USS Donald Cook, sailing in the Baltic Sea, CNN has learned. <http://cnn.com/2015/07/15/TP5m>". Below the text is a video player with a "BREAKING NEWS" banner and the headline "STUNNING VIDEO AS RUSSIAN JET". The video has 541K views, 5.3K reactions, and 2,500 shares. A comment from David R Burnes is visible at the bottom of the post, dated April 14 at 5:20pm. A blue arrow points from this comment to a larger, detailed view of the comment on the right. The detailed view shows the comment from David R Burnes: "What's your opinion? We'd like to know! Participate in our research surveys and enter to win prizes! <http://goo.gl/O99wxE>". The comment has "Like · Reply · April 14 at 5:23pm" below it. A vertical "PROOFPOINT" watermark is on the right edge of the screenshot.

Criminals use the comment section to target as many people as possible with fake online surveys and quizzes that steal personal information.

# Foursquare Spam: Fake Tip

## Advertising / Marketing



**Cisco** left a tip at **Baskin Robbins**

Jan 3 - Pantai Medical Centre, Kuala Lumpur, Malaysia

“ Buy the original XanGo mangosteen juice at best price  
<http://www.x1concept.com>

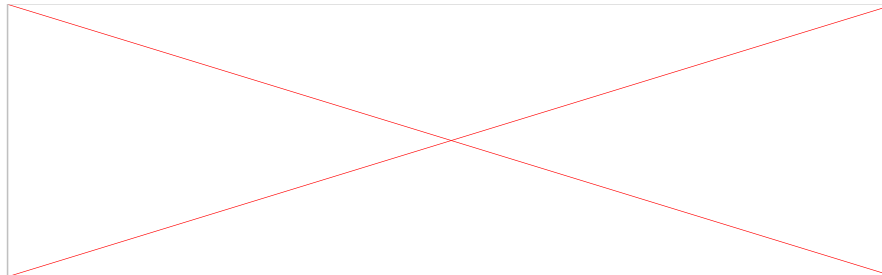
## Scam / Phishing



# Social reputation

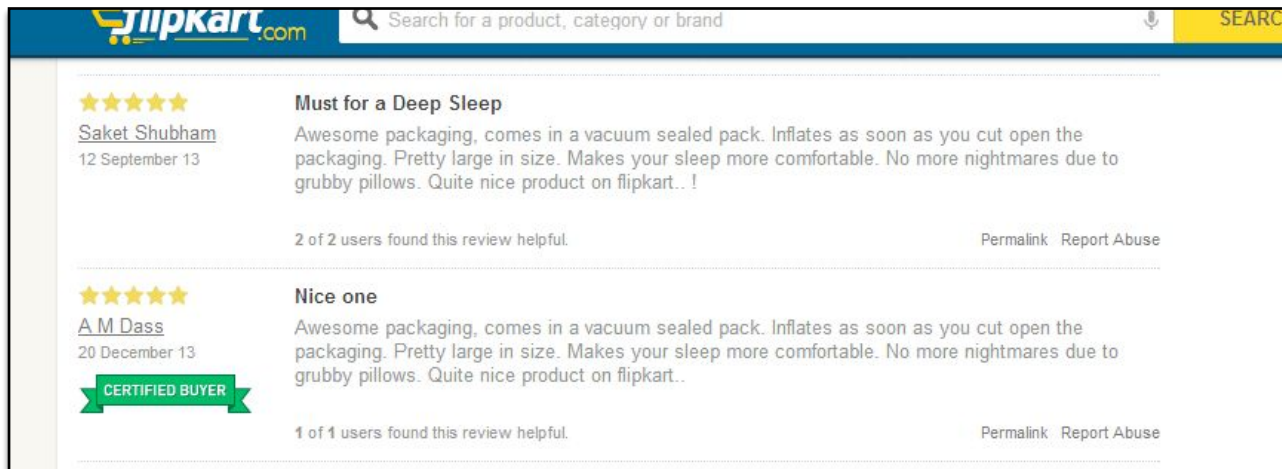


Skills & Expertise		Endorsements ?
24	Social Media Marketing	
19	Social Media	
11	Online Advertising	
7	Digital Marketing	
7	Email Marketing	
7	Blogging	
6	Public Speaking	
5	Social Networking	
3	Marketing Strategy	
2	Web Analytics	
More Skills & Expertise		
2	Corporate Blogging	2 Content Marketing 1 Internet Marketing
1	Web Development	1 Conference Speaking 1 Facebook
1	Google Analytics	1 Content Strategy Social Marketing
	PHP	





# Social reputation manipulation



The screenshot shows the Flipkart website interface. At the top, there's a search bar with the text "Search for a product, category or brand" and a "SEARCH" button. Below the search bar, there are two reviews for a product. Both reviews are 5-star ratings and have the same text: "Awesome packaging, comes in a vacuum sealed pack. Inflates as soon as you cut open the packaging. Pretty large in size. Makes your sleep more comfortable. No more nightmares due to grubby pillows. Quite nice product on flipkart.. !". The first review is by "Saket Shubham" dated "12 September 13" and has "2 of 2 users found this review helpful". The second review is by "A M Dass" dated "20 December 13" and is marked as a "CERTIFIED BUYER" with "1 of 1 users found this review helpful". Both reviews have "Permalink" and "Report Abuse" links.

**Flipkart.com** Search for a product, category or brand SEARCH

★★★★★  
Saket Shubham  
12 September 13

**Must for a Deep Sleep**  
Awesome packaging, comes in a vacuum sealed pack. Inflates as soon as you cut open the packaging. Pretty large in size. Makes your sleep more comfortable. No more nightmares due to grubby pillows. Quite nice product on flipkart.. !

2 of 2 users found this review helpful. Permalink Report Abuse

★★★★★  
A M Dass  
20 December 13  
**CERTIFIED BUYER**

**Nice one**  
Awesome packaging, comes in a vacuum sealed pack. Inflates as soon as you cut open the packaging. Pretty large in size. Makes your sleep more comfortable. No more nightmares due to grubby pillows. Quite nice product on flipkart..

1 of 1 users found this review helpful. Permalink Report Abuse

## Amazon Sues 1,000 People Over Fake Reviews

The e-commerce giant hopes to crack down on bogus product reviews across the site.

🕒 10/19/2015 12:55 pm ET | Updated Oct 19, 2015

# Clickbaiting

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**Celeb Style Weekly**

August 20 

You'll NEVER believe which two stars got into a fight on the red carpet last night!! CLICK to find out which starlet they were fighting over!! ---->

<http://bit.ly/1b7quT9>



# # hijacking



# # hijacking

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**DiGiorno Pizza**   
@DiGiornoPizza

#WhyIStayed You had pizza.

9/8/14,



**DiGiorno Pizza**   
@DiGiornoPizza



 Follow

A million apologies. Did not read what the hashtag was about before posting.

 Reply  Retweet  Favorite  More

# Compromised account

**The Associated Press**   
@AP

 **Following**

Breaking: Two Explosions in the White House and Barack Obama is injured

 Reply  Retweet  Favorite  More

**1,452**  
RETWEETS

**63**  
FAVORITES



12:07 PM - 23 Apr 13

25

# Impersonation

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[Home](#) ▶ [Bollywood](#) ▶

## Kiran Rao Files Complaint Against Imposter For Fake Facebook Account

[Press Trust of India](#) | June 05, 2016 14:48 IST ([Mumbai](#))



# Work from home scam

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**WANTED**

AS SEEN ON TV Pinterest CNN  
twitter facebook

**Want to make an EXTRA SALARY simply  
by filling out surveys for major companies?**

**Get Paid \$5-\$40 per survey,  
and they just take 5-10 minutes each!**

I made 80 bucks last week at **opiniongathering.com**

# Thank you

[pk@iiitd.ac.in](mailto:pk@iiitd.ac.in)

[precog.iiitd.edu.in](http://precog.iiitd.edu.in)

[fb/ponnurangam.kumaraguru](https://www.facebook.com/ponnurangam.kumaraguru)