

# Online Social Networks, a Criminals Multipurpose Toolbox (Poster Abstract)

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In this paper, we discuss how online social networks can be used by conventional (physical) criminals as a toolbox to (1) find incentives for a crime (who to rob and why?), (2) plan the crime's execution (how and when to rob them?), and (3) make an escape plan (how to avoid getting caught?).

**Text Updates and Photo Uploads.** Textual updates similar to the ones shown in Table 1 can provide criminals with incentives. 154000 users on Facebook have publicly expressed the possession of a diamond while 2190 expressed losing their keys at a certain place. Any overlap between the two sets, within the geographical reach of the criminal, could give them an easy access to a valuable item. Table 1 contains limited publicly shared results. A criminal may widen their search by embedding support for their local languages and using a larger set of phrases. Similarly, uploading a photo of valuable items on social networks can also incentivize crime. Moreover, sleeping and drinking patterns identified from uploads, can help criminals in planning their crime execution hours.

**Crime Promotion Using YouTube.** YouTube can be used by criminals for planning their crime and to gain the necessary skills to execute it, e.g. a criminal may learn how to pick locks from one of the 23300 videos teaching it on YouTube (statistics given in Table 2).

**LinkedIn Helps Find Professionals.** LinkedIn can be used by criminal groups to locate people with specific skills, e.g. LinkedIn's "CodeBreakers" group can help with finding cryptologists. Similarly they may use LinkedIn's "search like a pro" feature to short list candidates for specific tasks. Coworker information by LinkedIn could be used to coerce users to do a task.

**Table 1.** Theft incentivizing phrases on Facebook and Twitter (May 16, 2012)

Phrase	Shared publicly on Facebook	Shard publicly on Twitter
"I bought" OR "I got" "a diamond"	154,000	12,900
"I got a diamond necklace"	24	18
"I bought" OR "I got" "Rolex"	23,000	2,140
"I lost my keys in"	2,190	1,850

**Facebook Applications as Information Goldmines.** Facebook applications are mostly owned and regulated by third parties. All top ten Facebook

applications using statistics from appdata.com, record a user’s: user name, profile picture, gender, list of friends, email address, userID and other information publicly shared. Most of these applications also access the user’s home address and contact numbers. All this information, if leaked to criminals, can be used by them for targeted crimes, e.g. a user’s name, profile picture and gender can provide criminals with an estimate of the level of resistance they may face, if they attempt to break into a house and find the person being there.

**Social Network Events May Define Optimal Times for Theft.** Facebook and Meetup events can be used to invite users to events. For public events anyone can confirm, decline, comment on event page, or check who else has been invited. Criminals can also check the event pages to see if their potential victims are attending and plan their crime accordingly. On Facebook any user’s attendance option for a public event page is publicly visible.

**Impact of Family and Friends on Crime.** Having friends and family working for law enforcement agencies can act as a deterrent or an attractor for criminals. Petty thieves will prefer to target someone with limited access to means of tracing the criminal. Large criminal organizations may want to take revenge to set an example. Mexican drug cartels have killed several U.S. federal agents as an act of revenge. Moreover, Information about family members could help criminals kidnap them for ransom or to coerce their main target to fulfill a task.

**Friends as Your Weak Link.** Social network friends can provide criminals with access to victims photos, postings, etc., helping them with their attack.

**Facebook Real Name Policy can Help Theft.** With an estimate of the age of the victim and the full name, a criminal can use websites like people-tracer.co.uk or 123people.com to find information including full address, property value, phone number and neighbors details. All these bits and pieces of information can make a previously impossible crime fairly easy.

**Organize Crime and Target Competitors Using Social Networks.** Criminals like any other group of users of social networks can plan and organize their events through social networks, e.g. Twitter was used in London riots to organize riots and loots. With billions of photos and videos being shared, some can be used by criminals for passing steganographic messages about their next project, avoiding eavesdropping. Criminals can run social network analysis to find their competitors and leak their information to the law enforcement agencies.

**Future Work.** We will observe some users who upload crime incentivizing information to identify if their risk of being robbed increases. Also, as a defense tool we will write a tool which will warn users when they upload crime incentivizing information.

**Table 2.** YouTube videos that may help theft (May 16, 2012)

Phrase	Total Videos	Maximum views (single video)
pick lock	23300	7788708
RFID cloning	237	48199
hack CCTV	733	51910