Cybersecurity & Safety for Parents

Randy Marchany
VT IT Security Office & Lab
Some Examples

- https://www.youtube.com/watch?v=opRMrEfAliI
- https://www.youtube.com/watch?v=UhhYSrUHnao
  - Social media data privacy Awareness video
- https://www.youtube.com/watch?v=F7pYHN9iC9I
  - Mind reader
Your Apps Are Watching You

• Smartphones keep a lot of info about you
  – Phone numbers
  – Txt messages
  – Pics
  – Owner’s name
  – Unique ID # (can’t be disabled)

• Wall St. Journal article describes some of these “threats”
Your Apps Are Watching You

• 101 iPhone, Android apps examined
  – 56 transmitted phone’s unique ID# to other companies w/o user awareness or consent
  – 47 transmitted phone’s location
  – 5 sent age, gender, other personal details to outsiders

• Tracking companies build detailed dossiers

• iPhone apps transmitted more data than Android apps
Your Apps Are Watching You

• Example: iPhone App TextPlus 4
  – Send phone ID # to 8 ad companies, phone’s zip code, user’s age, gender to 2 of them

• Pandora (iPhone, Android)
  – Send age, gender, location, phone ID# to ad networks.

• Paper Toss (iPhone, Android)
  – Send phone ID# to 5 ad companies
Snapchat

needs access to

$ In-app purchases
  Allows the user to make purchases from within this app

👤 Identity
  Uses one or more of: accounts on the device, profile data

✉ Contacts
  Uses contact information

📍 Location
  Uses the device’s location

✉️ SMS
  Uses one or more of: SMS, MMS. Charges may apply.

🖼 Photos/Media/Files
  Uses one or more of: files on the device, such as images, videos, or audio; the device’s external storage

📸 Camera
  Uses the device’s camera(s)

 микрофон Microphone
  Uses the device’s microphone(s)

_WIFI connection information

.bluetooth connection information

.device ID & call information

Google Play

ACCEPT
E-Book Reading Up On You?

- E-books, Kindles, iPads, Nooks, can transmit info back to the manufacturer
  - How fast you read (turn the page)
  - Do you skip to the end? 😊
  - Where you read the book? Geolocation!
What’s a Phone ID?

• Unique ID number assigned to every phone
  – iPhone – Unique Device Identifier (UDID)
  – Android – various names
  – Set by phone makers, carriers or OS makers
  – Can’t be blocked or deleted

• Best tracking tool for ad companies
  – Watch what you download, how often you use them, how much time you spend on them. Some aggregate individual data
The Internet is NOT anonymous

- We Did an experiment tracking someone on the net
• Simple tracking a smartphone throughout campus
2 ways of looking at it

• [https://www.commonsensemedia.org/social-media](https://www.commonsensemedia.org/social-media)
  – Nice reference site

• [https://38 pitches.wordpress.com/2015/03/01/the-world-we-live-in-man-has-it-changed/](https://38 pitches.wordpress.com/2015/03/01/the-world-we-live-in-man-has-it-changed/)
  – Curt Schilling tracking down the trolls
The Net Is NOT Anonymous

What you say on the net stays on the net

Who said it can be tracked

Anonymity invites boorish behavior

Strip away this cloak
Some Examples

- Mobile Forensics
- Location Tracking
- Identity publication
- Actions bring consequences
<table>
<thead>
<tr>
<th>Type</th>
<th>Start</th>
<th>End</th>
<th>Alarm</th>
<th>Text</th>
<th>Note</th>
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<td>Funds transfer</td>
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<td>Meeting</td>
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<td>Laura Graves - Dan Esposito</td>
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<td>Lectures: emerging markets trend...</td>
<td>1. Trends 2. Country...</td>
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<td>Martin Graves - Incredible events</td>
<td>Red Street</td>
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<td>Meet James Parker</td>
<td>Don't miss this! Very L</td>
<td>1. Green Street</td>
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<td>Every week, Th...</td>
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<td>Meet Jason Clarke</td>
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<td>Meet Jason Lopez - otomatical ...</td>
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<td>Meet Mr. Jonathan Kingsley Jr.</td>
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<td>Mr. Rico Code Ahmed's col...</td>
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<td>Meeting</td>
<td>06.09.2012</td>
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<td>Pay Dan Esposito for his special...</td>
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<td>Regulat production meeting</td>
<td>Jane Roberts</td>
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<td>Send business correspondence</td>
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<td>Zade Ahmed's party</td>
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geopositioning
Web cache
Phone history
Skype analyzer
Wifi analyzer
filebrowser
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<th>Remote party</th>
<th>Description</th>
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<td>16.05.2008 13:08:49 N/A</td>
<td>+79262479174</td>
<td>Ok, I'll be there in 5 min.</td>
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<td>+79035841186</td>
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<td>18.07.2007 11:32:30 N/A</td>
<td>+79052729910</td>
<td>Uj kak-to bolno merzko sie 6ou vygljadit.</td>
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<tr>
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<td>17.07.2007 23:49:42 N/A</td>
<td>+79052729910</td>
<td>To na zapade, a to u nas. Raznye javlenija. Ibo otblesk na nih istonja naše i ih civilizacii borsaet razny.</td>
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<td>16.09.2005 14:46:48 N/A</td>
<td>+1340</td>
<td>Please, ask John to meet me in the airport. My plane arrives at 9 PM on Saturday.</td>
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<td>Incoming</td>
<td>16.09.2005 14:45:35 N/A</td>
<td>+1340</td>
<td>There are only one day before we'll be together again. Hope, you didn't forget your sailor. I didn't. I miss you every minute.</td>
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<td>16.09.2005 14:44:49 N/A</td>
<td>+1340</td>
<td>The trip to the Pirate Bay was marvellous. I found a great gift for you in a store on a real pirate frigate. I'm sure, you'll like it!</td>
</tr>
<tr>
<td>Inbox</td>
<td></td>
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<td></td>
<td>E5FC1DA1BC93E321F7C09100548D2E8</td>
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</table>
How Do I Protect my info?

- Don’t post personal info online
- Use social media privacy setting
- Be wary of others
- Search for yourself
- Review privacy settings regularly
- Understand what a #hashtag is
Own your online presence!

- No private info in social media
- Who can see @Instagram photo with the #hashtag
- Use Google reverse image search to check out a LinkedIn request
- Never assume privacy in social networks.
- Is that really your friend sending you notes?
What to tell your kids

- Be nice, no harassment
- Think **twice** before hitting Enter
- **WWGS?** What **Would Grandma Say?**
- Use **Privacy Settings**
- Don’t Friend strangers. **Verify who they are first!**
How long does it stay

- What goes on the net, stays on the net
- My earliest post – 1984!
- Share only what you’re comfortable sharing
Keep the Computer in a Central Location
It’s much easier to keep tabs on any online activity when the computer is located in a high-traffic zone than if your child is using a computer in the privacy of her own room. Place the computer in a central location like your kitchen or family room so that everything is out in the open.

Urge Your Kids to Avoid Questionnaires, Free Giveaways and Contests
A pop-up ad appears and tells kids they can win a free iPad by simply clicking the link. Anyone would be tempted by this kind of offer, but kids are particularly susceptible, so it’s important to warn kids against falling for this kind of Internet trick.
Monitor the Pictures Your Child Posts Online
In an ideal world, your child would never post a photo of herself online, but that might not be entirely realistic. If she wants to share photos with her friends via email or a social networking site, be sure you know exactly which pictures are being posted. Make sure the content of the photo is completely innocuous and that no identifiable locales in the background are noticeable.

The American Academy of Pediatrics (AAP) recently released findings from a comprehensive study on the impact social media has on kids and families. Although there are real benefits to kids using sites like Facebook, including increased communication, access to information and help in developing a sense of self, there can be serious downsides to all this online sharing too.

Popular programs such as Net Nanny and PureSight PC let you monitor social media sites, block chats, filter content and much more. You can even monitor your child’s cell phone with a software program like My Mobile Watchdog.

If your kids are old enough to be using the computer on their own, they are old enough to understand that there are rules they need to abide by. Breaking them should not have a lesser consequence than if they broke a rule in the offline world.
References

Contact Information

- Randy Marchany
- VA Tech IT Security Office
- [http://security.vt.edu](http://security.vt.edu)
- Marchany@vt.edu
- @randymarchany
Slide 1 Subject Header

• Content to follow
• Testing the slide show
  • Sub-sections