

HOME » TIPS »

To catch a cyber-thief

/ no comments

5-Jun-2013

[

| E-mail

| 

|

]

Contact: Clea Desjardins
clea.desjardins@concordia.ca
514-848-242-45068
Concordia University

New search tool helps in fight against child porn, permits quick capture of e-criminals



IMAGE:

Gaby Dagher and Benjamin Fung, Concordia Institute for Information Systems Engineering, are researchers.

[Click here for more information.](#)

•

•

Montreal, June 5, 2013 When local police came calling with child porn allegations last January, former Saint John city councillor Donnie Snook fled his house clutching a laptop. It was clear that the computer contained damning data. Six months later, police have finally gathered

RECENT NEWS

[Paracyclist 'has no fat under skin'](#)
[Skipping Breakfast May Raise Diabetes Risk](#)
[New infographic provides healthy grilling tips to avoid cancer-causing agents](#)
[Study: Older patients will make positive lifestyle changes to avoid risk of fractures](#)
[Obese male mice father offspring with higher levels of body fat](#)
[Scientists uncover clues to cancer's spread](#)
[Your Weekly Travel Zen: The Beach](#)
[Samara Foisy: How To Give Your Dad The Gift Of Health This Father's Day](#)
[Rubin Naiman, Ph.D.: Father's Day And Night: A Man's Sleep](#)
[Debbie Gissoni: 5 Ways To Ensure You're Getting The Most Out Of Summer](#)
[Sen. Schumer seeks crackdown on "academic doping"](#)
['Chase and run' cell movement mechanism explains process of metastasis](#)
[Advances in genetic sequencing diagnose Paralympic hopeful's rare condition](#)
[Noble gases hitch a ride on hydrous minerals](#)
[IU chemists produce star-shaped macromolecule that grabs large anions](#)
[Global cooling as significant as global warming](#)
[Mapping translation sites in the human genome](#)
[People Think Secret Information Is Better Information](#)
[A video map of motions in the nearby universe](#)
[Happy Father's Day! The Psychology of Papas.](#)
[30 under 30: Designing New Ways to Stop Tumors Worry and Relationships](#)
[Body Image Boosters From The Blogosphere 6.16.13](#)
[Climate Change Getting Worse by the Minute](#)
[Nature Photography: Good or Bad for the Environment?](#)
[The Perfect Summer Salad \(Vegan Recipe\)](#)
[Smoke Mindfully to Quit Mindfully: Day 12: Change Timing...](#)
[NHS cash-for-access: health fears as 'stock' destined for wards stored in ...](#)
[Over-hyped genetic findings: the case of dyslexia](#)
[Scientists Find Simple Way to Create Gold-Indium Oxide Catalytic Nanoparticles](#)
[6 Behaviors That Cure And Prevent Cancer](#)
[After A Decade, I Finally Reconnected With My Father](#)
[Brain Chemistry Altered by Later Life Experience, Part 2...](#)
[Haiti paper says authorities note human flu in DR](#)
[Australia cracks down on synthetic drugs](#)
[PHOTO: Why This Simple Message Means So Much](#)
[Happy Father's Day: Why being a father is good for your health](#)
[8 medication mistakes moms make—and how to avoid them](#)
[6 health threats you can't ignore](#)
[The best city to have a heart attack?](#)
[Fingernail stem cells may be the key to regrowing limbs](#)
[Short Bursts of Exercise Key to Feeling Full](#)
[5 Tips To Be A Great Dad](#)
[Regulation of protumorigenic pathways by Insulin like growth factor binding protein2 and its association along with beta-catenin in breast cancer lymph node metastasis](#)
[The role of the RNA chaperone Hfq in Haemophilus influenzae pathogenesis](#)
[Update on a Cluster of Influenza A Cases in Siu Lam Hospital](#)
[FEHD cancels restaurant licence in Tsuen Wan](#)

enough evidence to land him in jail for a long time to come.

With a case seemingly so cut and dry, why the lag time? Couldn't the police do a simple search for the incriminating info and level charges ASAP? Easier said than done. With computing devices storing terrabytes of personal data, it can take months before enough evidence can be cobbled together from reams of documents, emails, chat logs and text messages.

That's all about to change thanks to a new technique developed by researchers at Concordia University, who have slashed the data-crunching time. What once took months now takes minutes.

Gaby Dagher and Benjamin Fung, researchers with the Concordia Institute for Information Systems Engineering, will soon publish their findings in *Data Knowledge Engineering*. Law enforcement officers are already putting this research to work through Concordia's partnership with Canada's National Cyber-Forensics and Training Alliance, in which law enforcement organizations, private companies, and academic institutions work together to share information to stop emerging cyber threats and mitigate existing ones.

Thanks to Dagher and Fung, crime investigators can now extract hidden knowledge from a large volume of text. The researchers' new methods automatically identify the criminal topics discussed in the textual conversation, show which participants are most active with respect to the identified criminal topics, and then provide a visualization of the social networks among the participants.

Dagher, who is a PhD candidate supervised by Fung, explains "the huge increase in cybercrimes over the past decade boosted demand for special forensic tools that let investigators look for evidence on a suspect's computer by analyzing stored text. Our new technique allows an investigator to cluster documents by producing overlapping groups, each corresponding to a specific subject defined by the investigator."

Fung says that, "out of all the types of available data in cybercrime investigation, text data is the most common medium used by scammers, identity thieves and child exploitation criminals. But this type of data is also the most challenging to analyze. It's really hard make a software program automatically interpret the underlying meaning of the text."

The researchers have also developed a new search engine to help investigators identify the relevant documents from a large volume of text. Says Dagher, "In a normal search engine, a user enters some keywords and results can vary widely. In contrast, our search engine captures the suspects' vocabulary, and then uses it to improve the accuracy of the search results. Just like some cultures are said to have over 50 words for snow, criminals might have 50 words for snow of a different kind! This search engine allows investigators to pick up on those nuances and quickly identify the incriminating documents."

"Experiments using real-life criminal data already suggest that our approach is much more effective than the traditional methods," says Dagher. This new method of quickly sifting through huge amounts of text to zero in on the evidence could soon be used by law enforcement agencies around the world, meaning future cybercriminals can go to trial much more quickly, saving time for the police as well as money for tax-payers.

Related links:

Concordia Institute for Information Systems Engineering
<http://www.ciise.concordia.ca/>

National Cyber-Forensics and Training Alliance Canada <http://www.ncfta.ca/>

Gaby Dagher's website <http://users.encs.concordia.ca/~daghir/>

Benjamin Fung on Research @ Concordia
<http://www.concordia.ca/explore/#/profile/111/>

Concordia's Computer Security Library <http://www.ciise.concordia.ca/CSL/>

Media contact:

Cla Desjardins

[Towards a novel influenza vaccine: engineering of hemagglutinin on a platform of adenovirus dodecahedron](#)

[Preventive care in general practice among healthy older New South Wales residents](#)

[Disparities in the use of antenatal care service in Ethiopia over a period of fifteen years](#)

[Seroepidemiological study of ovine toxoplasmosis in East and West Shewa Zones of Oromia Regional State, Central Ethiopia](#)

[Kicking betting habit a family affair](#)

[Yoga As Self Care](#)

[Well: A Different Kind of Fatherhood](#)

[ID3 contributes to cerebrospinal fluid seeding and poor prognosis in medulloblastoma](#)

[The University of Texas Houston Stroke Registry \(UTHSR\): implementation of enhanced data quality assurance procedures improves data quality](#)

[FusionQ: a novel approach for gene fusion detection and quantification from paired-end RNA-Seq](#)

[Dragon boat carnival, food safety and robots lead Campaign events for week of June 17 to 23](#)

[Three additional overseas cases of Middle East Respiratory Syndrome closely monitored by DH Mi..am.i.](#)

[A Smoking Ban in All Related Companies Rentals](#)

[Novelties: A Wearable Alert to Head Injuries in Sports](#)

[Economic View: What Sweden Can Tell Us About Obamacare](#)

[California to Expand Medicaid](#)

[Neonatologist celebrates Father's Day with his 10 sons](#)

[Clodynamics: A Future for History?](#)

[Helen Flanagan 'undergoes a nose job' after years of cruel jibes from bullies](#)

[Eu urged to act on hair dyes after allergy deaths: Warnings on packaging must be made explicit](#)

[Biomarker Brain Scans for Treatment Types \(Video\)](#)

['If I sit down too quickly, will I break my spine?' How Ian Puleston-Davies, the actor behind Coronation Street's carefree tough guy, is paralysed by his obsessions](#)

Senior Advisor, External Communications

Concordia University

Tel: 514-848-2424, ext. 5068

Cell: 514-909-2999

e-mail: clea.desjardins@concordia.ca

Web: concordia.ca/media-relations

Twitter: twitter.com/CleaDesjardins

[

| E-mail



|

]



AAAS and EurekAlert! are not responsible for the accuracy of news releases posted to EurekAlert! by contributing institutions or for the use of any information through the EurekAlert! system.



- [HOME](#)
- [DISCLAIMER](#)
- [PRIVACY POLICY](#)
- [TERMS CONDITIONS](#)
- [CONTACT US](#)
- [TOP](#)

Copyright ©2013 by AAAS, the science society.

RELATED POSTS

- [Paracyclist 'has no fat under skin'](#)
June 16, 2013
- [Skipping Breakfast May Raise Diabetes Risk](#)

June 16, 2013

- **New infographic provides healthy grilling tips to avoid cancer-causing agents**

June 16, 2013

- **Study: Older patients will make positive lifestyle changes to avoid risk of fractures**

June 16, 2013

- **Obese male mice father offspring with higher levels of body fat**

June 16, 2013

HEALTH MEDICINE NETWORK