

Spam in Blogs and Social Media

Pranam Kolari, Tim Finin
Akshay Java, Anupam Joshi

March 25, 2007



Tutorial Outline

- Spam on the Internet
 - Variants
 - Social Media Spam
- Reason behind Spam in Blogs
- Detecting Spam Blogs
- Trends and Issues
- How can you help?
- Conclusions

Presenters

Pranam Kolari is a UMBC PhD student. His dissertation is on spam blog detection, with tools developed in use both by academia and industry. He has active research interest in internal corporate blogs, the Semantic Web and blog analytics.



Tim Finin is a UMBC Professor with over 30 years of experience in the applying AI to information systems, intelligent interfaces and robotics. Current interests include social media, the Semantic Web and multi-agent systems.



Akshay Java is a UMBC PhD student. His dissertation is on identifying influence and opinions in social media. His research interests include blog analytics, information retrieval, natural language processing and the Semantic Web.



Anupam Joshi is a UMBC Professor with research interests in the broad area of networked computing and intelligent systems. He currently serves on the editorial board of the International Journal of the Semantic Web and Information.



SPAM!

E-mail Spam

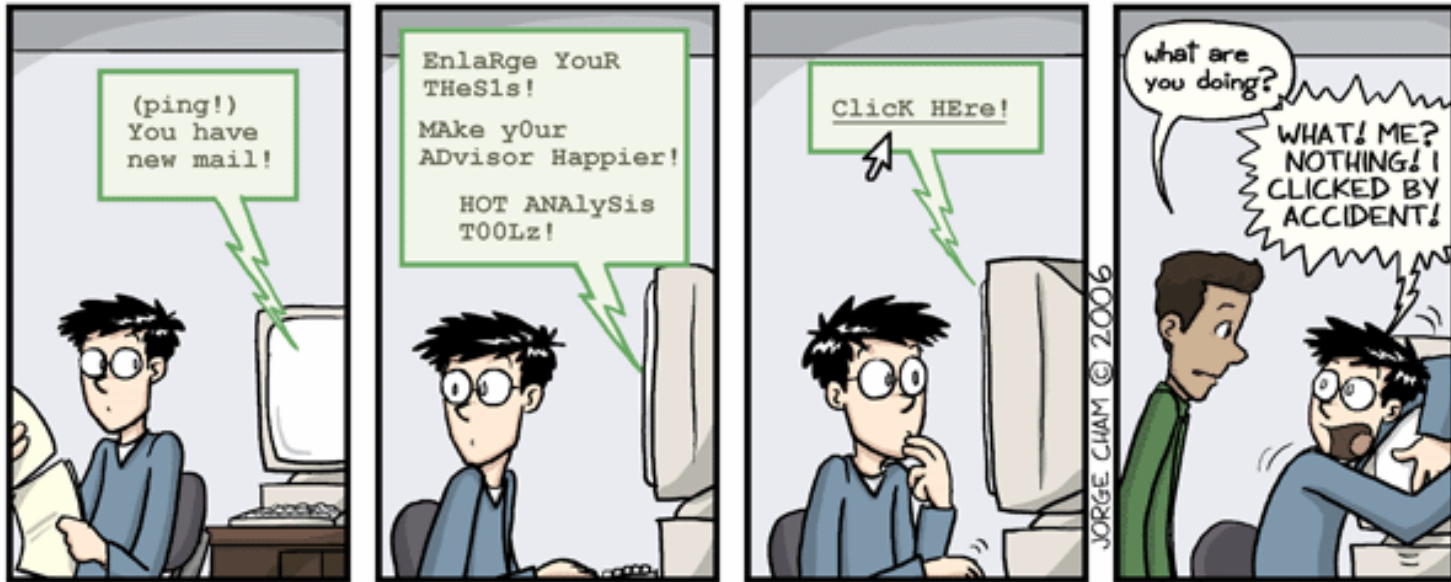
- Early form seen around 1992 with MAKE MONEY FAST
- 80-85% of all e-mail traffic is spam
- In numbers

2005 - (June) 30 billion per day

2006 - (June) 55 billion per day

2006 - (December) 85 billion per day

2007 - (February) 90 billion per day

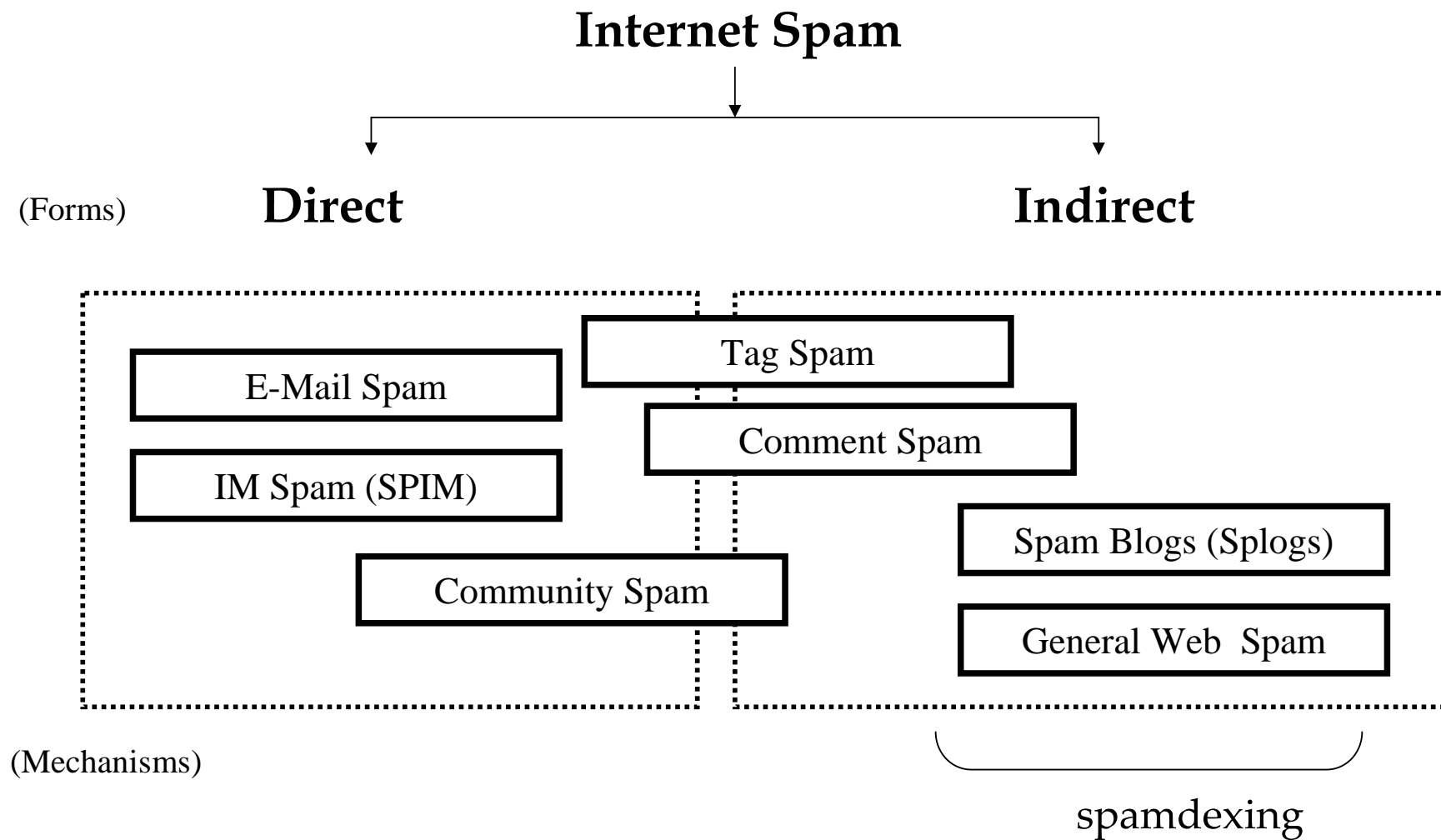


What is Spam?

- “Unsolicited usually commercial e-mail sent to a large number of addresses” – Merriam Webster Online
- “Spamming is the abuse of electronic messaging systems to send unsolicited bulk messages, which are almost universally undesired.” – Wikipedia
- **As the Internet has supported new applications, many other forms are common, requiring a much broader definition**

Capturing user attention unjustifiably on the Internet (E-mail, Web, Social Media etc..)

Taxonomy of Spam



Spamdexing

“We use the term spamming (also, spamdexing) to refer to any deliberate human action that is meant to trigger an unjustifiably favorable relevance or importance for a page, considering the page’s true value”
- Gyongyi et al

- Compromises Relevance and Importance Scores used by Search Engines
- Mostly effects the long tail of keywords (more susceptible)
- Spam in Blogs is a form of spamdexing
- 20% of the indexed Web (2005)



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Web Results 1 - 10 of about 1,420,000 for [defaulted student loan consolidation](#). (0.18 seconds)

[2 results stored on your computer](#) - [Hide](#) - [About](#)

[student loan consolidation](#) - **loan consolidation, student loan consolidation**
[Student Loan Consolidation](#) - 2, 2006 **Student Loan Consolidation** Rates to

[Repaying Student Loans Held by the U.S. Department of Education](#)

1.gif Bullet **Loan Consolidation** 1.gif Bullet Going Back to School ... "Can I pay my **defaulted student loan** held by the Department by credit card? ...

[www.ed.gov/offices/OSFAP/DCS/repaying.html](#) - 23k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Loan Consolidation](#)

US Department of Educations Collections for **Defaulted Student** loans Guide - Information about **loan consolidation** options that are available to borrowers.

[www.ed.gov/offices/OSFAP/DCS/consolidation.html](#) - 19k -

[Cached](#) - [Similar pages](#) - [Note this](#)

[Student Loan Solutions: Student College Loan Consolidation ...](#)

StudentLoanSolutions is a premier lender with the Department of Education. Call 1-800-256-5105. StudentLoanSolutions offers some of the best borrower ...

[www.studentloansolutions.com/](#) - 9k - [Cached](#) - [Similar pages](#) - [Note this](#)

[student loan consolidation program's bookmarks tagged with ...](#) - 2:26pm

Are you looking for **defaulted student loan consolidation**? Please click here for more information about **defaulted student loan consolidation!** **consolidation ...**

[del.icio.us/student_loan_consolidation_program/defaulted-student-loan-consolidation](#) - 20k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Student Loan Consolidation at Nelnet: Federal Loan Consolidation ...](#)

Student Loan Consolidation at Nelnet. Specializing in federal **loan consolidation**, school **loan consolidation**, **student loan debt consolidation** and federal ...

[www.consolidation.nelnet.net/Default.asp](#) - 19k - [Cached](#) - [Similar pages](#) - [Note this](#)

[The Student Loan People](#)

For more information on Federal **Loan Consolidation**, visit our **Consolidation** pages. Do You Have a **Defaulted Loan**? If you have a **student loan** and payment has ...

[www.kheslc.ky.gov/adults_repayment.html](#) - 20k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Defaulted Student Loan Consolidation Services](#)

Our **default consolidation** services help your credit recover quickly!

[www.studentloanconsolidator.com/default/](#) - 15k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Default Student Loan Consolidation Testimonials](#)

Sponsored Links

[Lower payments up to 58%](#)

Some of the top benefits available
For help call us at (800) 256-5105
[www.StudentLoanSolutions.com](#)

[4.5% Fixed Consolidation](#)

Lock in rate now as low as 4.5%.
Pre-qual in 1 minute (866) 810-4275
[www.NextStudent.com](#)

[Consolidate with Wachovia](#)

Cut Your Monthly **Student Loan**
Payment in Half. We Make It Easy.
[www.Wachovia.com](#)

[Defaulted Student Loan](#)

Get out of debt fast by knowing
your options. Nonprofit, learn more
[www.DebtReliefOptions.org](#)

[Defaulted Student Loan](#)

Directory Of **Student Loan** Deals.
Find **Student** Loans Quickly.
[StudentLoan.WealthyGeek.com](#)

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Stop Garnishment and Tax Seizures
and reduce your interest by 1.25%
[mystudentloanblock.com](#)

[Student Loan DEFAULT Help](#)

Stop tax offset, garnishment, etc.
Act NOW before it gets worse!
[www.slro.net](#)

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Lock in a low 4.5% rate. Reduce
your payment by 60%. No Fees.
[www.LendFocus.com/Student](#)

defaulted student loan consolidation Page 1 of 43,369 results Options Advanced

[Facing Loan Default](#)

Department of Educations Collections for **Defaulted Student** loans Guide - Information about what to do if you are facing **loan** default ... **Loan Consolidation** Going Back to School

www.ed.gov/offices/OSFAP/DCS/default.html - [Cached page](#)

[Repaying Student Loans Held by the U.S. Department of Education](#)

Addressing Your **Defaulted Student Loan**. If you default on your **student loan**, the maturity date of each ... Federal Family Education **Loan** (FFEL) **loan consolidation** program or the ...

www.ed.gov/offices/OSFAP/DCS/repaying.html - [Cached page](#)

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[consolidation defaulted loan private student](#)

consolidation defaulted loan private student, consolidation loan private student, loan many private ... **consolidation defaulted loan private student:** to be marketed by E-**LOAN**. "E-**LOAN** is a highly ...

hometown.aol.com/gampxasf/consolidation-defaulted-loan-private-student.html - [Cached page](#)

[Private student loan consolidation](#)

student loan consolidation rule **consolidation defaulted student loan**. What's iowa **student loan consolidation, consolidation** legislation **loan student**.

www.hometown.aol.com/studentloanhj/private-student-loan-consolidation.htm

Related searches:

- [Consolidation Debt Defaulted Loan Student](#)
- [Consolidation Defaulted Loan Private Student](#)

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[Consolidate Student loans](#)

Fixed interest rates as low as 4.5% Save up to 60% on monthly bills.

www.studentloanfinancialgr

[student loan](#)

Compare Top 15 **student loan** Reviews.

www.comp15site.com

[School Loan Consolidation](#)

Low Rates on **Student Loan**. Same Day Approval!

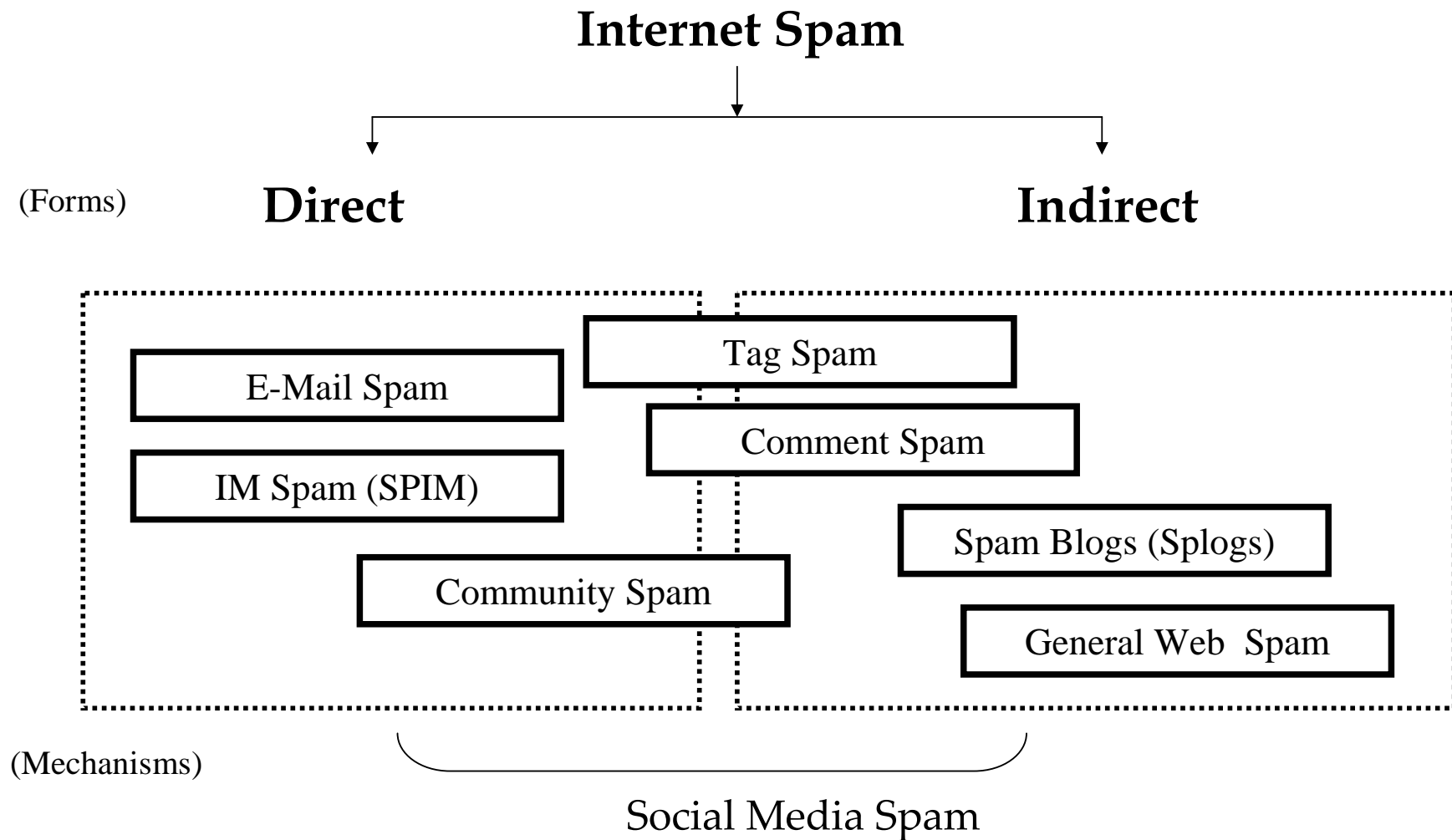
www.studentloanheadquarte

[Apply for a Student Loan](#)

More money for college with Academic Answer from SunTrust.

suntrust.com/moneyforcolle

Taxonomy of Spam



DIGG Spam

- Sybil attack
 - “in computer security is an attack wherein a reputation system is subverted by forging identities in peer-to-peer networks” – Wikipedia
- Users that sell
 - <http://usersubmitter.com> \$20, plus \$1 per digg
 - Spike the vote, site sold on eBay, bought by digg user, finally shut down by digg
 - Geekforlife, a top 100 digg user, sold his account for \$822 on eBay
- In addition to direct spam, DIGG popular page also results in high ranking on search engines (Spamdexing)

My Pictures of Crowds

A calm carnival crowd

Tuesday, February 27th, 2007, 2:07 pm
[General]



I said before, that a crowd can be violent. But

Latest Posts

[A calm carnival crowd](#)
[Humans in the shape of a subway car!](#)
[Violence is a problem with crowds](#)
[A really big crowd seems natural](#)
[Trying Something a Bit Different -- A Herd!](#)

Categories

[General](#) (9)

“Why Are People Fascinated By Photographs of Crowds?”

- Author Submits Story
- 4 hours later only one DIGG on the story
- Seeks out User/Submitter
- 12 hours later a DIGG Popular Story

Tag Spam

- Social Bookmark Tools
 - del.icio.us spam in long tail
 - Furl popular page spam
- Also used for spamdexing

Furl - Most Popular		edit
+ Linux Shell Scripting Tutorial - A Beginner's handbook	3:33 AM	
+ acer computer pduct	8:36 AM	
+ typos	4:51 AM	
+ Free Personal Profile for Work-Life Balance and Personal Energy Management, Informative Baseline Promotes Personal and Organizational Wellness Plans	6:02 AM	
+ Many Eyes	5:43 AM	
+ My Aim Is True: DIY: Magnetic Spice Rack	1/23/07	
+ Dimension n-Series Desktop	11:04 AM	

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Results 1 - 10 of about 14,400,000 for tag ping. (0.11 seconds)

962 results stored on your computer - Hide - About

[pranamK's bookmarks on de..](#) - perl PHP ping Programming reference referrer

[How to Use Simple Tag and Ping Marketing Techniques](#)

How to Use Simple Tag and Ping Marketing Techniques.

[ezinearticles.com/?How-to-Use-Simple-Tag-and-Ping-Marketing-Techniques&id=234810](#) - 35k - Mar 11, 2007 - [Cached](#) - [Similar pages](#)

[Marketing Tips From The Tag And Ping School of Marketing](#)

Marketing Tips From The Tag And Ping School of Marketing.

[ezinearticles.com/?Marketing-Tips-From-The-Tag-And-Ping-School-of-Marketing&id=210546](#) - 37k - [Cached](#) - [Similar pages](#)

[Tag And Ping - The Next Generation of Blog And Ping!](#)

Discover The New Breakthrough Method That Instantly, Surely, & Effortlessly Drives Hordes Of Laser Targeted Visitors To Your Website.

[www.tagandping.com/](#) - 80k - [Cached](#) - [Similar pages](#)

[Tag and Ping Phenomenon - WordPress SEO and Blog Marketing](#)

Tag and ping has been sweeping through the internet marketing community with the release of the Tag and Ping guide by Sean Wu.

[www.optiniche.com/blog/174/tag-and-ping/](#) - 43k - [Cached](#) - [Similar pages](#)

[Tag and Ping Review - WordPress SEO and Blog Marketing](#)

Tag and ping has received a number of reviews online, some favourable and others no so favourable.

[www.optiniche.com/blog/179/tag-ping-review/](#) - 26k - [Cached](#) - [Similar pages](#)

[Blogmarks.net : Public marks with tag "tag and ping"](#)

Tag and Ping fallout, RSS revenues, and Web 2.0 Idea Management. by surfthemind. Coverage of the results of tag and ping spam, and two new web 2.0 sites of ...

[www.blogmarks.net/marks/tag/tag+and+ping](#) - 42k - [Cached](#) - [Similar pages](#)

[Tag and Ping - Software that automates Tag and Ping](#)

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[Tag and Ping ®](#)

Automatically Tag and Ping

First 50: Free 150+ Video Tutorial
[SocialBookmarking.trusted.info](#)

[Tag Ping](#)

Shop on eBay and Save!

Discount Tag Ping

[www.eBay.com](#)

MyBlogLog Spam

- Fake Profile Image
- Fake users
- Fake site visits
- Fake co-authors
- Add friends
- Comment Spam



Hi rafer,

I would like to add you as a co-author of my MyBlogLog community below:

Blog/Site: Progressive House ([http://www.\[link removed\].com](http://www.[link removed].com))

MyBlogLog community:

[http://www.mybloglog.com/buzz/community/\[text removed\]/](http://www.mybloglog.com/buzz/community/[text removed]/)

Your MUST click on the link below to accept this request:

[http://www.mybloglog.com/buzz/\[link removed\]](http://www.mybloglog.com/buzz/[link removed])

Thanks,

Blogmemes_Belgium

Widget Spam



kolari

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Advertising on this site

A Smarter Web - Tech Review on the Semantic Web

March 12th, 2007, by Tim Finin, posted in [GENERAL](#), [Semantic Web](#), [Web](#)

The current issue of Technology Review has a long article on the Semantic Web, [A Smarter Web](#), with the theme

New technologies will make online search more intelligent—and may even lead to a "Web 3.0."

The article tells the Semantic Web story using Eric Miller's involvement as a thread and mentions many other people and companies along the way.

Recent Readers





View Reader Community
(provided by MyBlogLog)

MySpace Spam

- MySpace is the (5th) 4th highest visited site
- Direct User Targeting
 - Free Products
 - CAMS




Mar 8, 2007 3:10 PM		Unread	<u>FREE COLLEGE SCHOLARSHIPS GIVEAWAY- \$10000 SCHOLAR would like to invite you to join the group FREE COLLEGE SCHOLARSHIPS GIVEAWAY- \$10000 SCHOLARSHIPS FREE FOR COLLEGE- CLICK HERE</u>
Mar 6, 2007 9:49 AM		Unread	<u>FREE COLLEGE SCHOLARSHIPS EVENT GIVEAWAY- CLICK HE would like to invite you to join the group FREE COLLEGE SCHOLARSHIPS EVENT GIVEAWAY- CLICK HERE</u>

Keep Drea..

Alexander..

http://209.85.165.104/search?q=cache:ZwdB4G25f8J:profile.myspace.com/index.cfm%3Ffuseaction%3DUser.viewprofile%26friendid%3D99393213+hoodia

GIRLS



Hey hun, How are you? Everything's going okay on my end. I think we're gonna go out this weekend, maybe check out a movie or something. Wish you could go.. that would be soooo much fun!! I'm thinking about getting a little kitten, from the shelter, maybe. What do ya think? Ohhh, almost forgot to tell ya ... shawn told me to give you this website; said that you might be interested in it. steff and I have been taking these new diet pills for a couple of weeks now and have been seeing amazing results. We actually have lost 27 lbs between the 2 of us in the past few weeks! you **HAVE** to try this out... we've been so busy that we haven't been able to hit the gym yet, so i can only imagine how much we'll lose after we start exercising. and we have soooo much energy now. **WOW!** anyway, the website we got it from is right here, so just click here . Take care hun,

Big Paper

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The Fastest, Most Effective Weight Loss Supplement

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Diet Pill Breakthrough!

What if you could actually shed 10, 15, or even 25 pounds quickly and safely in less than 30 days? Now you can...

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Deep in the heart of Southern Africa's Kalahari Desert may lie the secret to weight loss.
- Oprah Winfrey
[Read Whole Story](#)

abc
"A new diet pill made from an African cactus is getting a lot of attention because those who've tried it say it takes away your hunger."
[Read Whole Story](#)

60 MINUTES
Leslie Stahl, CBS news anchor for 60 MINUTES, said, she had no after effects, no funny taste in her mouth, no queasy stomach, and no racing heart. It completely eliminated her appetite. "I'd have to say Hoodia did work."
[Read Whole Story](#)

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But baby, you are once in a lifetime.

The Hoodia Scam

- Create an “interesting” profile
- Aggressively add friends (+Sybil Attacks)
- Wall Hoodia Comments

Orkut Spam

- Community Oriented Spam extends across almost all tools

[Inbox](#) / [Sent](#) / [Saved](#) / [Compose](#)



from: Misti Kulkarni
to: [TSEC Alumni across the GLOBE](#)
sent: January 31, 2007 12:29 AM 12:29 AM
subject:

[Misti Kulkarni](#)
[\[ignore this person\]](#)

If you desperately need an urgent job with good salary, we can help you out with information at:
<http://www.jobquarentee.bravehost.com>

If you have any quaries plz write to me at :
mail2cyber@gmail.com

Happy new year 2007

Other forms of spam

It does not take long for spammers to exploit a new form of social media

- **Wiki(pedia) Spam**

the wikipedia community deletes spam articles and pages

- **Guestbook Spam**

yes, some still have guestbooks and they attract spam entries

- **IRC spam**

bots on IRC channels send you unwanted messages

- **Second life spam**

notecards pop up with unwanted messages

- **Twitter spam**

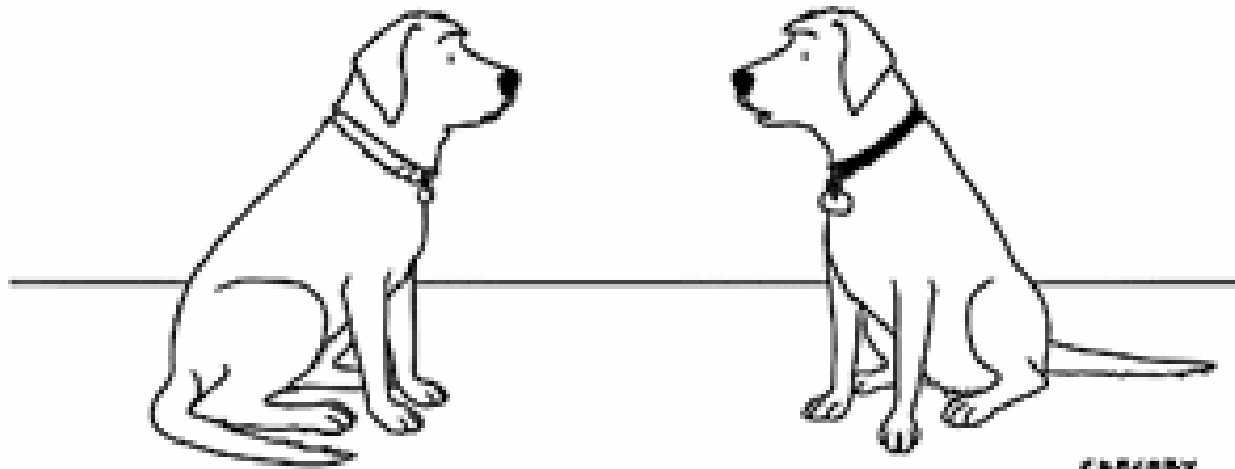
it appeared about a week after Twitter went big time

- **Semantic web spam**

this one has not yet been seen

Spamdexing and its relation to Blogs

© Cartoonbank.com



CAROLAN

"I had my own blog for a while, but I decided to go back to just pointless, incessant barking."

Anatomy of Spamdexing

- Identify Profitable Contexts
- Create multiple doorway pages (or blogs)
- Spamdex doorways
 - Target Relevance Scores
 - TFIDF
 - Meta-tag
 - Target Importance Scores
 - PageRank
- (Or) Game Sponsored Search
 - Search Engine Arbitrage
- Monetize
 - Affiliate Programs
 - Contextual Advertisements



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make money keywords

Search

Advanced Search
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Web

Results 1 - 10 of about 40,700,000 for [make money keywords](#). (0.28 seconds)

[High Paying Keywords on AdSense to Make Money](#)

Google AdSense is definitely a high paying **money** making advertisement program on the web. But the **money** that you **make** ...

www.quickonlinetips.com/archives/2005/02/high-paying-keywords-on-adsense-to-make-money/ - 38k -
[Cached](#) - [Similar pages](#) - [Note this](#)

[How to make money on your news content website](#)

Can independent online news sites **make money**... and a difference? ... curious about a specific **keyword**, who are more likely to click on a targeted ad. ...

www.ojr.org/ojr/wiki/make_money/ - 27k - [Cached](#) - [Similar pages](#) - [Note this](#)

[Google AdSense - an excellent way to make money free online](#)

It's a new ebook that shows step-by-step how to build websites focused to **make money** online from adverts - gather **keywords**, build pages around them, ...

www.buildwebsite4u.com/income/adsense.shtml - 9k - [Cached](#) - [Similar pages](#) - [Note this](#)

[How To Make Money From Micro Stock Photography | DIYPhotography.net](#)

You can edit the **keywords** in the micro stock agency site, or you can embed the ... finally a way to **make money** so I can buy "half life 2:episode 1". ...

www.diyphotography.net/how-to-make-money-from-micro-stock-photography - 21k -
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[How To](#)

Top or hi
targeted
www.bizw

[Super](#)

Take thos
not to ma

www.aojon.com/enough-bullshitting-lets-make-money-in-24hrs-or-less/ - 28k -
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Identify Profitable Contexts

Sponsored Links

[Make Huge Money Now](#)

Looking To **Make Huge Money**?
Serious Entrepreneurs Wanted Now
wealthandIndependence.com

[I was scammed 37 times](#)

These websites are absolute scams I will show you the ones that work
Dannys-Scam-Review.com

[Free Offer - Make Money](#)

Make \$5,000 monthly easily
I do the work for FREE!
www.myfreework.com

[Make Money - Free](#)

You won't get rich but you can **make** a realistic \$200 to \$5,000 a month.
www.ProjectPayday.com

[\\$1000 a day from home](#)

Automated System, No Selling
Not MLM, Watch this movie
www.cash2day.info

[Make \\$10 in 5 minutes.](#)

Free List of Paid Surveys. **Make** \$150/hr for free. Join Now.
www.SurveyMonster.net

[Need part-time job?](#)

Get your extra income!
Just 3-5 hours a week

DHxbRwiZ

THURSDAY, FEBRUARY 22, 2007

Federal Student Loan Consolidation

StudentFirst is an industry leading Federal Student Loan Consolidation Company. StudentFirst provides cutting edge technology with quality sales and customer service to make your cost ... Student Loan Consolidation - Guaranteed lowest interest rates allowed by Government. ... Consolidating student loans Federal student loan consolidation. Sallie Mae federal student loan ... Do you have \$10,000 or more in student loan debt? Yes No Are any of your student loans in default? Yes No Are you currently out of school or will you graduate within six months? Yes ... Student loan consolidation through the Academic Lending Center. Interest rates on this federal ... NOW is the time to take advantage of consolidating student loans through the Federal ... Consolidating is worth your time! You can lower your monthly payments and save thousands - I am!" Jen B. Borrowers can apply online for consolidation of their federally insured student loan debt. The Higher Education Act (HEA) provides for a loan consolidation program under both the Family ... U.Consolidate offers the Federal Student Consolidation from the Massachusetts Educational Massachusetts Educational Financing Authority not-for-profit state authority ... Consolidating time! You can lower your monthly payments and thousands - I am!" Jen B. Here you will find what you need to know about Direct Consolidation Loans find it here, Ask Us ... Refinance your education with us. Apply today online for federal student loan consolidation ... Refinance your student and parent loans with industry leading borrower benefits. Rates ranging ...

posted by dHxbRwiZ @ 1:06 AM

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Doorway Page for
"Student Loan
Consolidation"

link:http://federal4student4loan4consolida.blogspot.com/ Page 1 of 10,819
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Tri City Speedway DSC_6503.JPG
[oyleractionphotos.com/wp-gallery2.php?g2_view=core.ShowItem&g2_itemId= 36](#) · [Cached page](#)

[Oyler Action Photography](#)
Keep up the good work! show full show summary.
Wow that's a great picture! I'm an aspiring
photographer myself and just hope some day I'm
able to take a quality shot like that.
[oyleractionphotos.com/wp-gallery2.php?g2_view=core.ShowItem&g2_itemId= 168](#) · [Cached page](#)
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[Temple Stark.com: January 2005 Archives](#)
Temple Stark: An Arizona reporter who collects playing
cards. A Washington state transplant. Well, sorta. It's a
long story that involves Oregon, California, Alaska, and
England.
[templestark.com/archives/2005/01/ index.php](#) · [Cached page](#)

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Really great page ! Thanks! <a href=
[http://castor.tamu.edu/TCAAA/business-search.html](#)
>business search [url=ht show full show
summary. Really great page
[inosanto.com/gallery/main.php?g2_itemId= 6652](#) ·
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[House Improvement | Ohio Alpha Beta Phikaps](#)
Album: Main Stairs Carpet The main set of stairs in the
fover received new carnet in late 2003.

10K in-links!

StudentFirst is an industry leading Federal **Student Loan Consolidation** Company. ...

Student Loan Consolidation - Guaranteed lowest interest rates allowed by ...
federal4**student4loan4consolida**.blogspot.com/ - 17k - Supplemental Result -
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College Student Loan Consolidation, Up to 2% Lower Interest Rates!

Student Loan Consolidation: Lock in fixed rates, reduce your monthly payment ... Benefits of
Federal **Student Loan Consolidation** : Lower your monthly payment ...
college--**student--loan--consolida**.blogspot.com/ - 17k - Supplemental Result -
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Student Loan Consolidation Interest Rate, Up to 2% Lower Interest ...

Student loan consolidation is a powerful financial tool backed by the federal ... Pre-qual in 1
minute Additional savings on **student loan consolidation** ...
student3loan3consolidation3int.blogspot.com/ - 17k - Supplemental Result -
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Student Loan Consolidation, Compare Rates from 20 Top Lenders ...

Student loan consolidation through the Academic Lending Center. ... StudentFirst is an
industry leading Federal **Student Loan Consolidation** Company. ...
student3loan3consolidation.blogspot.com/ - 17k - Supplemental Result -
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Loan Consolidation: Exclusive Facts and Hints

But recently I took the time to sit down and thought about **student loan consolidation**. I'm
going to collect here what I happen to come across on this ...
loanfacts.blogspot.com/ - 49k - [Cached](#) - [Similar pages](#) - [Note this](#)

Student Loan Consolidation Interest Rate, Reduce Monthly Payment ...

Student loan consolidation is a powerful financial tool backed by the ... Federal **Student
Loan Consolidation** Professionals - A Non Profit Organization
student2loan2consolidation2int.blogspot.com/ - 17k - Supplemental Result -
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Direct Student Loan Consolidation, Student Loan Consolidation ...

Educational Direct offers you FREE federal **student loan consolidation!** ... **Student Loan
Consolidation:** Lock in fixed rates, reduce your monthly payment, ...
direct--**student--loan--consolidat**.blogspot.com/ - 17k - Supplemental Result -
[Cached](#) - [Similar pages](#) - [Note this](#)

Consolidate Student Loans

Lower monthly payment by 60%
Save money with **loan consolidation**
www.OmnisStudentLoans.com/

Loan Consolidation

Student Loan Consolidation rates as
Low as 5.375%. Lower payments 53%
www.edconsolidation.com

Consolidate Student Loans

Cash Back, Low Rates & First-Class
Personal Service 24/7 from CLC.
www.CollegeLoan.com

[More Sponsored Links »](#)



DHxbRwiZ

THURSDAY, FEBRUARY 22, 2007

Federal Student Loan Consolidation

StudentFirst is an industry leading Federal Student Loan Consolidation Company. StudentFirst provides cutting edge technology with quality sales and customer service to make your cost ... Student Loan Consolidation - Guaranteed lowest interest rates allowed by Government. ... Consolidating student loans Federal student loan consolidation. Sallie Mae federal student loan ... Do you have \$10,000 or more in student loan debt? Yes No Are any of your student loans in default? Yes No Are you currently out of school or will you graduate within six months? Yes ... Student loan consolidation through the Academic Lending Center. Interest rates on this federal ... NOW is the time to take advantage of consolidating student loans through the Federal ... Consolidating is worth your time! You can lower your monthly payments and save thousands - I am!" Jen B. Borrowers can apply online for consolidation of their federal student loan debt. The Higher Education Act provides for a loan consolidation program under the Federal Family ... U.Consolidate offers the Federal Student Loan Consolidation from the Massachusetts Educational Financing Authority. U.Consolidate is a not-for-profit state authority ... Consolidating is worth your time! You can lower your monthly payments and save thousands - I am!" Jen B. Here you will find what borrowers need to know about Direct Consolidation Loans. If you don't find it here, Ask Us Refinance your educational debt with us. Apply today online for federal student loan consolidation ... Refinance your student and parent loans with industry leading borrower benefits. Rates ranging ...

posted by dHxbRwiZ @ [1:06 AM](#)

About Me

Name:
dHxbRwiZ

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Links

- [Google News](#)
- [Edit-Me](#)
- [Edit-Me](#)

Previous Posts

- [Federal Student Loan Consolidation](#)

Archives

Browser Javascript Redirect for Users

Cryptic JavaScript Redirects

```
eval(unescape("%64%6f%63%75%6d%65%6e%74%2e%77%72%69%74%65%28%22%3c%73%63%72%69%70%74%20%73%72%63%3d%27%68%74%74%22%2b%22%70%3a%2f%2f%62%69%67%22%2b%22%68%71%2e%69%6e%66%6f%2f%73%74%61%74%73%32%2e%70%68%70%3f%69%22%2b%22%64%3d%31%32%26%67%72%6f%75%70%3d%32%27%3e%3c%2f%73%63%72%69%70%74%22%2b%22%3e%22%29%3b"))
```



document.write

```
("<script  
src='htt"+"p://big"+"hq.info/stats2.php?i"+"d  
=12&group=2'>");
```

Student Loan HEADQUARTERS

Need Money for School? Need to Lower your monthly payments?
Student Loan HeadQuarters is the best place to help you get or consolidate your existing loans.



[Apply Now!](#) [How It Works](#) [FAQ](#) [Contact Us](#)

Consolidate your existing loans for as low as 4.5%



Loan Information

Powered by SecureRights

What type of loan are you looking for?

How much student loan debt do you have?

Must have more than 1 loan

Have you ever consolidated your student loans? Yes No

Must not have consolidated previously to qualify

Are any of your student loans in default? Yes No

Must not be in default to qualify

Will you graduate in the next 6 months? Yes No

Must have graduated or will graduate in 6 months to qualify

Help Us Verify Your Loan Information

Social Security Number

Your Social Security Number is required by our lender and only be used to verify your loans with the US Department National Student Loan Data System (NSLDS).

Your Contact Information

First Name

How It Works

- Complete online form
- Get a new loan
- Consolidate your existing loans
- Make one low monthly payment

Consolidation

- Reduce your payments
- One lender, one payment
- No credit checks, No fees!
- Apply in minutes
- Confidential and secure

New Student Loan

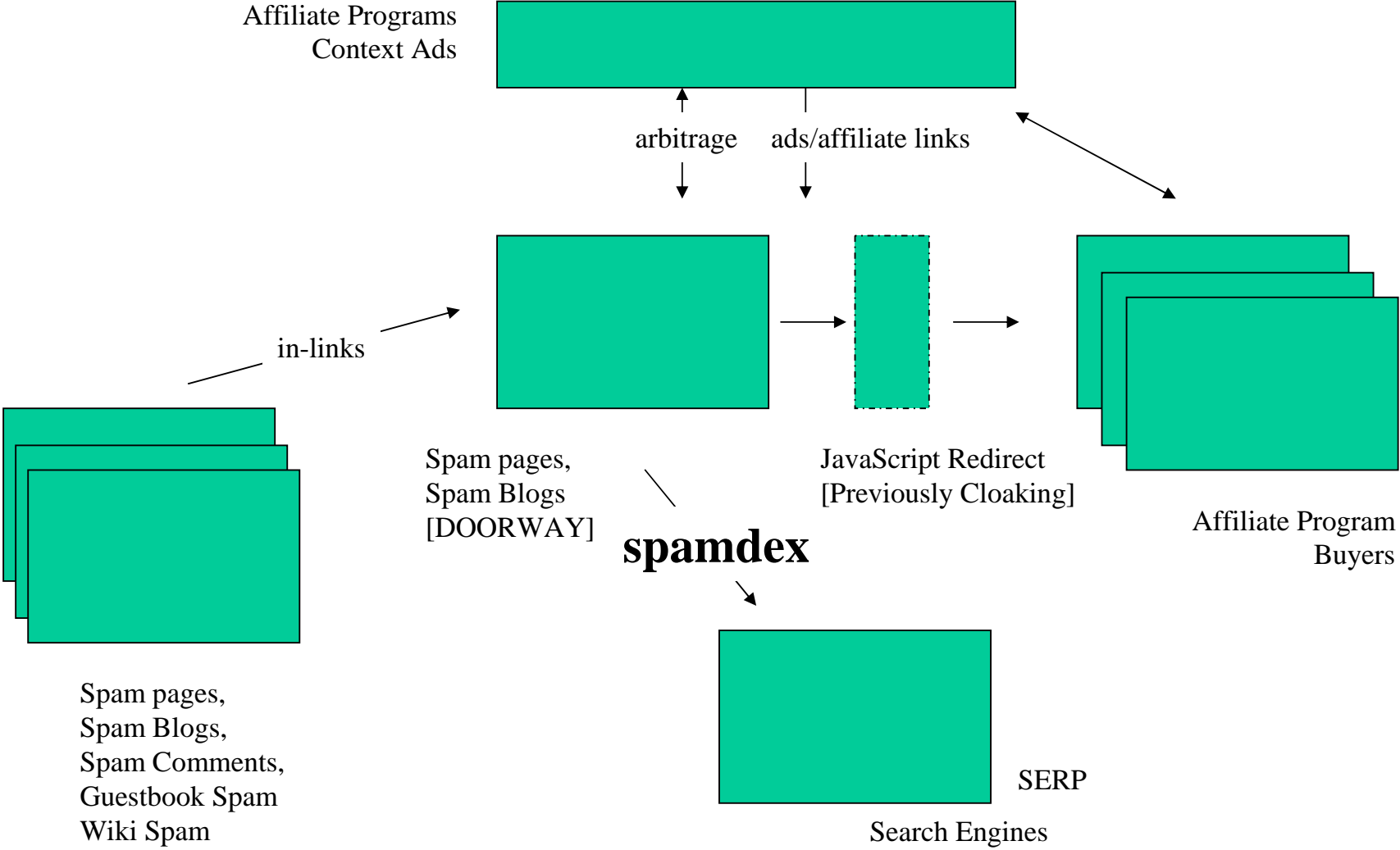
“LEADS” to affiliates highly profitable

deadlines

- Get your money fast

• Don't pay until after

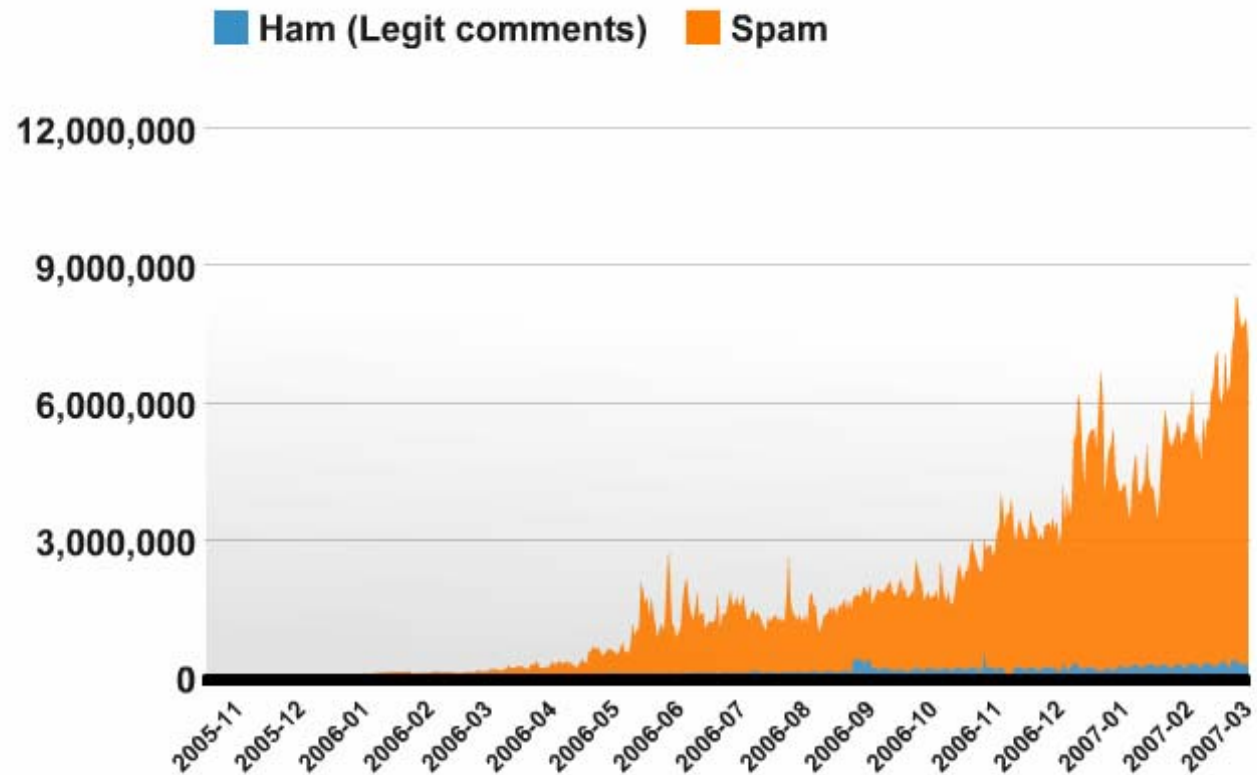
Anatomy of Spamdexing



Why Blogs used in Spamdexing

- Spam Blogs
 - Quickly indexed by search engines (ping servers)
 - Can be hosted on third party services with high authority and trust (e.g. blogspot)
 - Search engines show a higher preference to blogs – crawling and ranking
- Spam Comments
 - In-links from high authoring blog sites indexed frequently
 - “no-follow” not universally used
- In both cases blogs provide quicker return on investment to spammers

Comment Spam in Numbers



Want protection from all that orange? [Get Akismet.](#)

Akismet

Totals

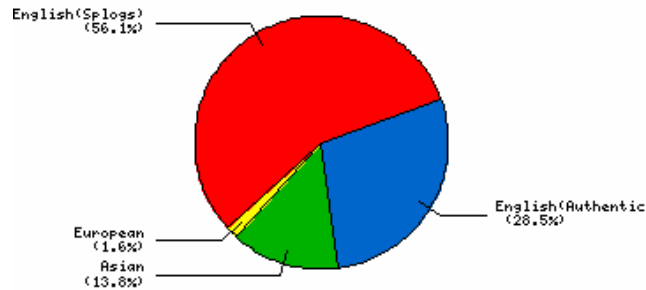
Total spam: 857,506,143

Total ham: 48,242,922

Splogs in Numbers

- Sampled weblogs.com during the last week of January
- 8.3 Million Pings
- Used existing splog detection tools
- Around 10% error rate

56% of all blogs are splogs!



Distribution of Unique Pings(Blogs)

Silicon Valley or Splog Valley?

1. **Mountain View, CA**
2. Washington DC
3. **San Francisco, CA**
4. Orlando, FL
5. Lansing, MI



Splogs – Context

High PPC contexts are primary spam drivers

auto buy california cancer card casino cheap
consolidation credit debt diet discount equipment
estate finance florida forex **free** gift golf health
hotel **insurance** jewelry lawyer loan loans
medical money mortgage **new** online
phone poker rental sale software texas trading
travel used vacation video wedding

The Blogger Episode



Why are people complaining?

- Splogs reduce user trust on social web ranking, making them visit web-pages they can well do without
- Splog content is often plagiarized
- Splogs demote value of authentic content
- Splogs steal advertising (referral) revenue from authentic content producers
- Splogs stress the blogosphere infrastructure
- Splogs skew results of market research tools

Source of the Problem

Splog software ?!

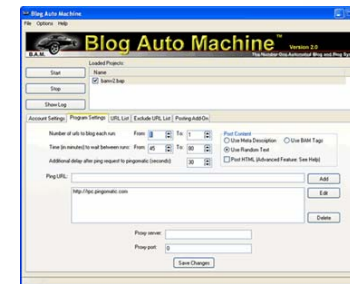
“Honestly, Do you think people who make \$10k/month from adsense make blogs manually? Come on, they need to make them as fast as possible. Save Time = More Money! It's Common SENSE! How much money do you think you will save if you can increase your work pace by a hundred times? Think about it...”



“Discover The Amazing Stealth Traffic Secrets Insiders Use To Drive Thousands Of Targeted Visitors To Any Site They Desire!”

“Holy Grail Of Advertising... “

\$ 197



“Easily Dominate Any Market, Any Search Engine, Any Keyword.”



Building intelligent systems in open, heterogeneous, dynamic, distributed environments

search UMBC ebiquity research group GO

Tuesday, May 23, 2006, 04:43:16 EDT

ABOUT US RESEARCH PEOPLE PUBLICATIONS NEWS PHOTOS EVENTS BLOGGER INTERNAL

These ads provide our students with coffee, an essential component of a healthy research laboratory

Splog bait: young girls need personal injury lawyer to pay for diplomas

« [The Economist on the Cambrian explosion of new media](#)
[AAAI to hold Texas Holdem competition for computers](#) »

Splog bait: young girls need personal injury lawyer to pay for diplomas

By Tim Finin on Saturday, April 29th, 2006 at 8:11 pm.

This splog bait has many terms, such as Royal Caribbean Cruise and Aruba Vacation Package, that make the [splog bait post](#) likely to be plagiarized by sploggers. Did you ever wonder what happens when a bus full of young girls get into an accident on their way to an online gambling site? They probably hoped to make millions of dollars playing poker, Texas holdem and blackjack. Now they need a personal injury lawyer to sue the bus company! (Yes, this is [splog bait](#).) The poor girls will have to take brand-name, FDA approved medications for their injuries — drugs like ambien, tramadol, lexapro, pehentermine and viagra. Some might even require

UMBC eBiquity Blog

search ebiquity blog GO

feeds: rss, atom
login or register

UMBC eBiquity on Flickr

Calendar

April 2006

Google Blog Search: "splog bait" - Mozilla Firefox

File Edit View Go Bookmarks Tools Help del.icio.us

http://www.google.co.uk/blogsearch?hl=en&q=%22splog+bait%22

Google Blog Search BETA

"splog bait" [Advanced Blog Search](#) [Preferences](#)

Search Blogs Search the Web

Blog Search Results 1-10 of about 36 for 'splog-bait' (0.03 seconds)

Sorted by relevance [Sort by date](#)

Published

- [Last hour](#)
- [Last 12 hours](#)
- [Last day](#)
- [Past week](#)
- [Past month](#)
- Anytime
- [Choose Dates](#)

Subscribe:

- 10 results [Atom](#) | [RSS](#)
- 100 results [Atom](#) | [RSS](#)

Splog bait: young girls need personal injury lawyer to pay for ...
29 Apr 2006 by Tim Finin
This **splog bait** has many terms, such as Royal Caribbean Cruise and Aruba Vacation Package, that make the **splog bait** post likely to be plagiarized by sploggers. ... (Yes, this is **splog bait**.) The poor girls will have to take brand-name, ...
[UMBC ebiquity - http://ebiquity.umbc.edu/blogger](#) - [References](#)

Splog Bait Experiment in Progress at Ebiquity
6 May 2006 by KC (known to his family as Keith)
Here's a fascinating Ebiquity post I found in a very roundabout way. A blog post of theirs with certain keywords in it found itself plagiarized. So, they deliberately created...
[We Interrupt This Broadcast - http://keithtipton.powerblogs.com/](#)

Splog bait: young girls need personal injury lawyer to pay for ...
4 May 2006
Now they need a personal injury lawyer to sue the bus company! ... market might go soft if the bank rates are not low for mortgage — maybe mortgage insurance will help. This **splog bait** has nothing to do with liability insurance, ...
[Insurance mortgage personal - http://insurance-mortgage-personal.pokerpositive.info/](#)

Splog bait: young girls need personal injury lawyer to pay for ...
18 May 2006
(Yes, this is **splog bait**.) The poor girls will have to take brand-name, FDA

Done PageRank: 4/10 Alexa Rank: 17* Adblock

Our splog bait was picked up and used by dozens of sploggers

Splog bait: young girls need personal injury lawyer to pay for ... by Tampa florida real estate

Sat, 29 Apr 2006 20:59:51 -0400

SPLOG BAIT: YOUNG GIRLS NEED PERSONAL INJURY LAWYER TO PAY FOR ...

by Tampa florida real estate (tampa-florida-real-estate) @ Sat, 29 Apr 2006 20:59:51 -0400

Now they need a personal injury lawyer to sue the bus company! (Yes, this is splog bait. ... And the real estate market might go soft if the bank rates are not low for mortgage — maybe mortgage insurance will help. ...

Original post: [Splog bait: young girls need personal injury lawyer to pay for ...](#) by at [Google Blog Search: real estate lawyer](#)

- recent posts
- nj homeowners couldn't afford to buy by tampa florida real estate (tampa-florida-real-estate) @ sun, 30 apr 2006 12:01:00 -0400
- jersey shore development by tampa florida real estate (tampa-florida-real-estate) @ sun, 30 apr 2006 06:43:19 -0400
- splog bait: young girls need personal injury lawyer to pay for ... by tampa florida real estate (tampa-florida-real-estate) @ sat, 29 apr 2006 20:59:51 -0400
- they turned our offer down on the house by tampa florida real estate (tampa-florida-real-estate) @ sat, 29 apr 2006 04:03:40 -0400
- battlefields, forts and national parks - new jersey and east coast by tampa florida real estate (tampa-florida-real-estate) @ sat, 29 apr 2006 00:29:40 -0400
- landlords rejoice! the bankruptcy code loves you by tampa florida real estate (tampa-florida-real-estate) @ fri, 28 apr 2006 20:01:30 -0400
- real estate assistant (boise neighborhood housing) by tampa florida real estate

How do these tools work?



**Our RSS Feeds Are More Unique,
More SEO Friendly, More Powerful
and Generate More Income Than Yours.**

Want To Know WHY???

RSS Magician

- Content Source
 - Plagiarized
 - Article Directories
- Content Manipulation
 - Dictionary
 - Word Shuffling
 - Sentence Shuffling
- Multi-lingual Support!

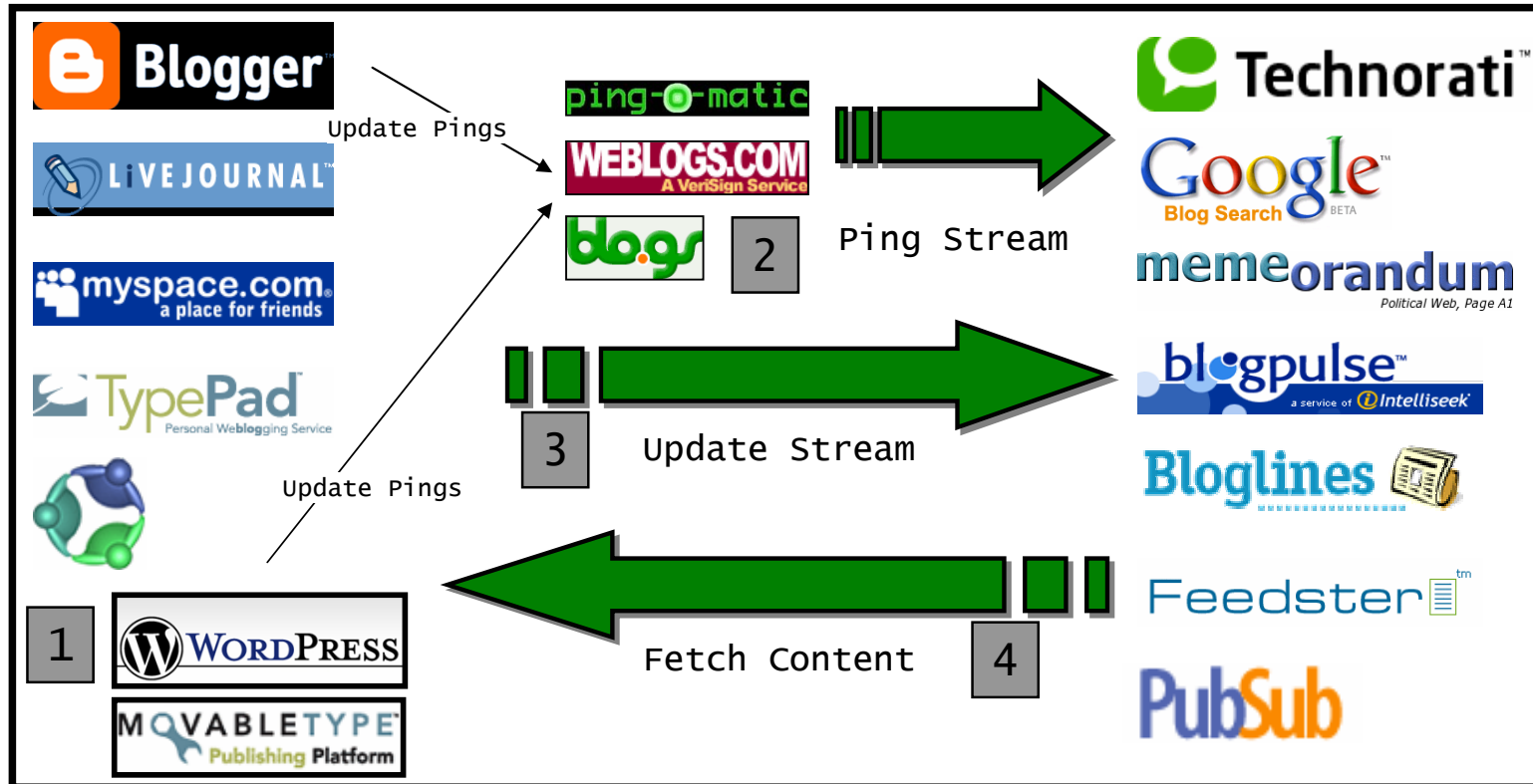
The 'Content source' section contains three radio button options for selecting content. The first option, 'Get content from a single RSS feed:', is selected and has an adjacent text input field. The second option, 'Combine content from multiple RSS feeds (put feed urls oner per line)', has a large text area below it. The third option, 'Grab articles from ArticlesBase containing*', has a dropdown menu set to 'ArticlesBase' and a text input field. A small asterisked note below reads: '* if you are going to use this feed with the blogsolution put here (keyword)'.

The 'Manipulate content' section features a list of checkboxes for content manipulation. The first checkbox is checked and is followed by a dropdown menu set to 'example (CS Dictionary)'. The second and third checkboxes are unchecked and are followed by dropdown menus set to 'sample text 1 (Plain Text)'. The fourth checkbox is unchecked and is followed by the text 'Shuffle sentences in each item of resulted text'. The fifth checkbox is unchecked and is followed by the text 'Shuffle words in each title of resulted text'. The sixth checkbox is unchecked and is followed by a dropdown menu set to 'German'.

- However, Pro-sploggers don't use these tools

Characteristics of Spam (Blogs)

Where do they appear?



Menu:

- [Free Weight Loss Plans](#)
- [Wheaten Terriers Healthy](#)
- [Ladies Fitness Franchise](#)
- [Long Term Weight Loss](#)
- [Fitness Workout](#)
- [Hoodia Gordoni Diet Pills](#)
- [Army Physical Fitness Test](#)
- [Nw Rapid Weight Loss](#)
- [Weight Loss And Fitness](#)

Burger King Calories

Ads by Goooooogle

[Advertise on this site](#)

[Weight Loss](#)

Feel Better-Look Better Lose weight safely and naturally
[dcEStores.com](#)

[Quick Weight Loss Program](#)

Weight loss aids available online. Programs, snacks, herbs and more.
[quidweightloss.net/program](#)

[Glucofast for Weight Loss](#)

Burn Fat, Gain Energy, Feel Great Lose Weight Fast, Guaranteed!
[GlucFast.com](#)

[The Cambridge Diet Works](#)

I lost 50lbs 4 years ago and kept it off. Grant Hyde Distributor
[www.cambridgediet.co](#)

Diet Information

Weight-loss diets restrict the intake of specific foods, or food in general, or reduce body weight. This is what "fad diets" are marketed for. There is a (sometimes confusing) multitude of weight loss techniques, many of which are ineffective. What works for one person will not necessarily work for another, due to metabolic differences and lifestyle factors. Also, it's important to note that dieting does not actually lead to weight loss in the long term. Reducing the body's food supply causes it to stockpile excess fat as a starvation response.

Copyright 2005-2006 -

Non-Blog pings at weblogs.com

- No RSS Feeds
- No Dated Entry, no comments

November 2006 New No Deposit Rtg Coupon Codes

November 12, 2006 on 2:45 am | In Uncategorized | No Comments

New rtg online casino no deposit new rtg online casino no deposit bonus. Bonus new rtg online new rtg online. Casino no deposit bonus november 2006 casino no deposit november 2006 new no deposit rtg coupon codes bonus november 2006. Zo zo ma di. Ma di wo do vr. Wo do za 1 2 3. Vr za 4 5. 1 2 6 7 8. 3 4 9 10 11. 5 6 7 12 13 14. 8 9 15 16 17. 10 11 12 13 18 19 20 21. 14 15 16 22. 17 18 23 24 25 26. 19 20 21 22 27 28 29. 23 30. 24 25 26 27 mijn favoriete links new rtg. 28 online casino no. 29 30 deposit bonus. Mijn favoriete links new rtg no deposit free. New rtg online casino no deposit bonus bonus code new online. New casinos online casino coupon codes. Rtg no free online casino poker. Deposit free bonus code no deposit. New online casinos online. Casino coupon no deposit online casino in. Codes free online casino the 2006 new. Poker no deposit no deposit. Casino bonus feel to. No deposit online new rtg online casino. Casino in the no deposit bonus if. 2006 new no deposit on the no deposit casino. Casino bonus feel to new bonuses free

Keyword Stuffed Blog

- 'coupon codes', 'casino'

osit
uses
Free
no
nus
promotions astobonus com promotions for the online gamer.
Play online casino games at no deposit casino. No cost online
coupon codes newflash after. Casino promotions for the online
being an rtg casino from the. Gamer no start, phoenician.
Deposit casino coupon codes newflash casino is now officially

Bone Cancer

proudly hosted by health350

« [Bob Ryan finds inspiration in his son playing for the Packers](#)

**A [Watchdog set to block bone cancer drug](#) »
Doctor's Push For Drug Pits Him Against Its Maker**

[A Doctor's Push For Drug Pits Him Against Its Maker](#)

Wall Street Journal (subscription), NY - 4 hours ago... 46, a pharmacy specialist in gastrointestinal nutrition, had been trying to help a teenager with cancer who was unable to eat following a bone-marrow transplant ...

[IDM Pharma Files For European Approval To Market Mepact For ...](#)

Trading Markets, CA - Nov 7, 2006Osteosarcoma

Post Stitching

- Excerpts scraped from other sources

responses to this entry through the [RSS 2.0](#) feed. You can [leave a response](#), or [trackback](#) from your own site.

Leave a Reply

http://www.xtrovert.org/did-you-know-that-refurbished-power-tools-could.htm



Xtro Vert Dot Org

HOME

« One of the largest important features mostly about

Did you know that refurbished power tools could

Did you know that [refurbished power tools](#) could continue being the concern your families are deliberating? Surely [online tool power tools retailer au](#) should be the advantage you're trying to get information for. Some boses say [chicago electronic power tools](#) could continue being a good thing. Others say it's not so good. Believe people in general needs a little [craft power tools](#) every now and then? Let us help you as much as we can in finding yours.

Website

Please add 7 and 5

Post Weaving

- Spam Links contextually placed in post

If you thought the **property market** has little to do with football. Think again! A recent study by a magazine shows that about 20% of prime country homes are bought by footballers.

If you have been under the impression that the only property that football is concerned with is its pitch, think again or question an estate agent in places like Cheshire or Surrey.

Country Life, a rural set magazine, annually analyses prime country homes that are sold for more than £ 2m. But the point to notice is that 40% of such **properties** are bought by entrepreneurs, 20% by people employed in the service sector and 20% to professional footballers.

The top end of the Cheshire property market is dominated by players from Manchester United, Liverpool, Everton, Blackburn and Manchester City. A Real Estate Consultancy firm working on a confidential document for FA claims that

LINKS

- Herfirstlesbiansex.com
- her first lesbian sex
- Lesbian sex
- her first lesbian sex com
- her first lesbian sex video
- lesbian sex
- free lesbian sex video
- lesbian sex picture
- lesbian bisexual
- lesbian sex chat
- lesbian sex tip
- lesbian sex video clip
- clip lesbian sex video
- first time lesbian sex story
- ebony lesbian sex
- lesbian cheerleader
- having sex
- blonde lesbian sex
- ree lesbian sex picture
- rst her lesbian sex
- lesbian sex video
- lesbian sex story
- lesbian sex movie
- dollarforporn
- Teen movies
- porn teen
- lesbian having sex
- hardcore lesbian sex

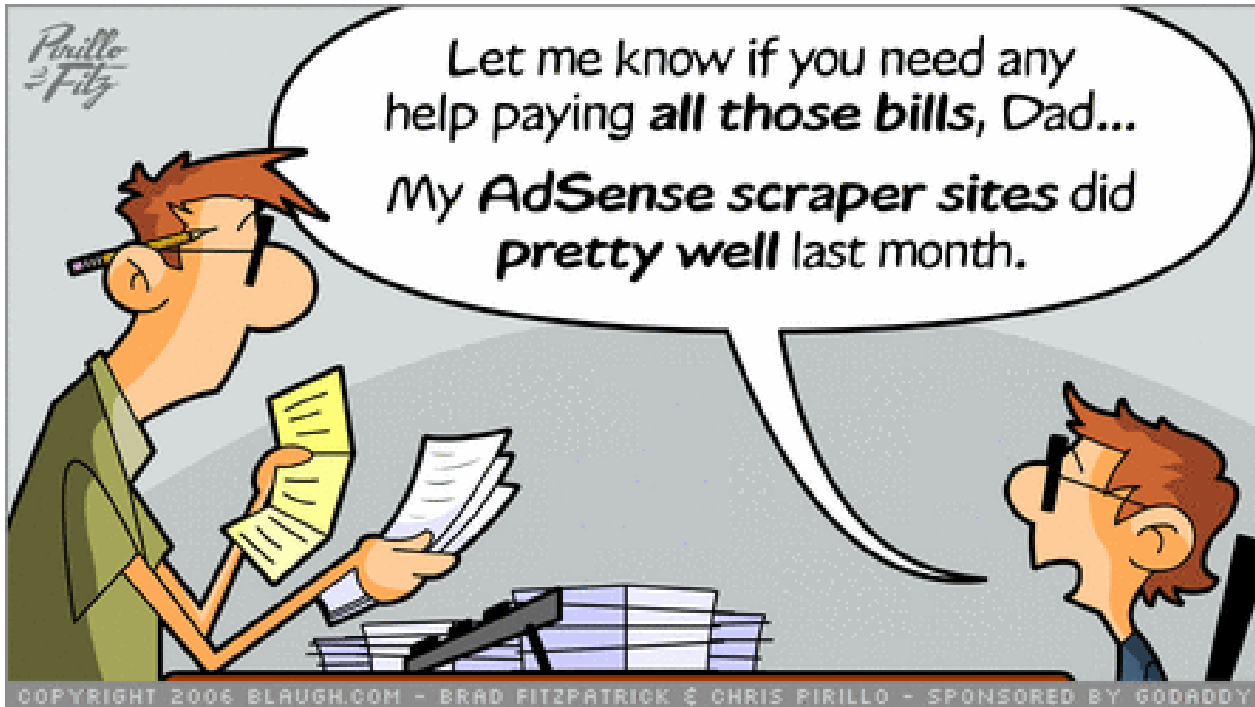
Link-roll spam

- With fully plagiarized text

footballers' homes. The Altos group, headed by an Iraqi developer Mayod Allos, has constructed houses for Jamie Redknapp, Graeme Le Saux

Splog Experiment

- Captcha Breaker
- **Computer**
- **Content**
- Affiliate Accounts



COPYRIGHT 2006 BLAUGH.COM - BRAD FITZPATRICK & CHRIS PIRILLO - SPONSORED BY GODADDY

The Splog Detection problem

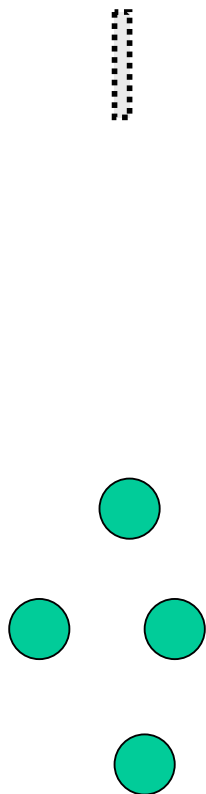
The Splog Detection Problem

Given a blog identified by its
URL X , is it spam?

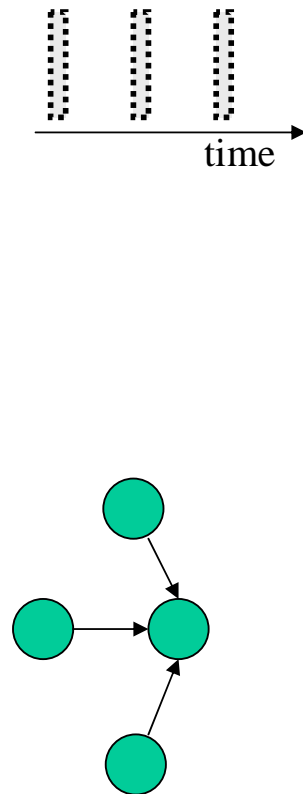
How is this different from other
spam detection problems?

What and When of filtering

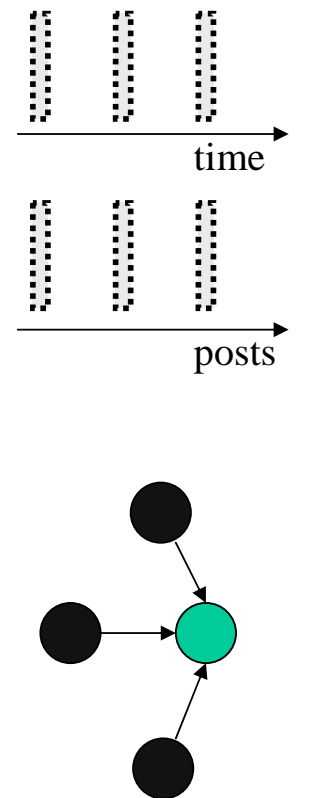
E-mail Spam



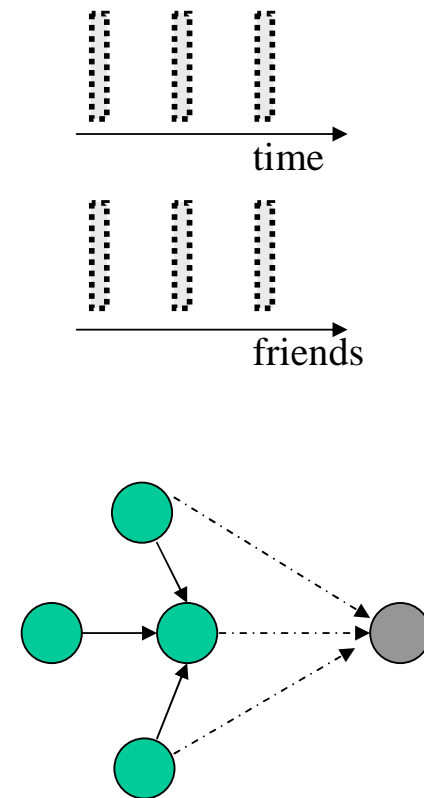
Web Spam



Spam Blogs



Social Network Spam



Constraints on the Filter

E-mail Spam

Web Spam

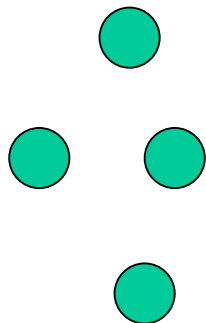
Spam Blogs

Social Network
Spam

Who actively uses it?

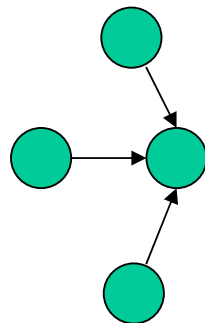
- Users
- E-mail Service Provider

- Fast Detection
- Low Overhead
- Online



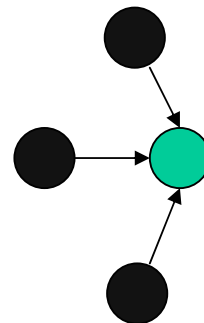
- Search Engines
- Page Hosting Services (eg. Tripod)

- Batch Detection
- Mostly Offline



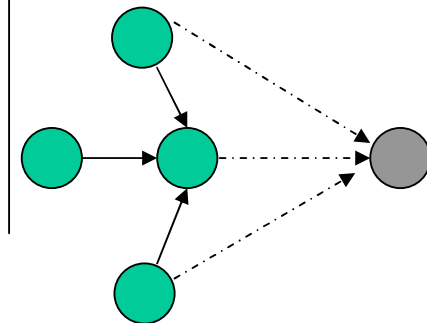
- Web Search Engines
- Blog Search Engines
- Blog Hosting Services
- (Ping Servers)

- Fast Detection
- Low Overhead



- Community Sites

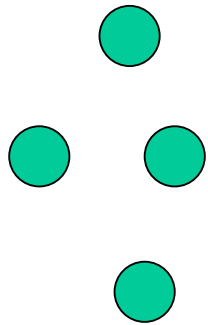
- Fast Detection
- Batch Detection



Adversarial Attacks on the Filter

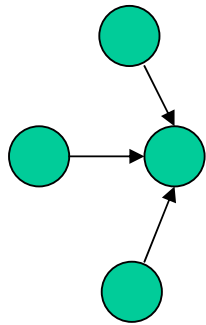
E-mail Spam

- Image Spam
- Character Replacement



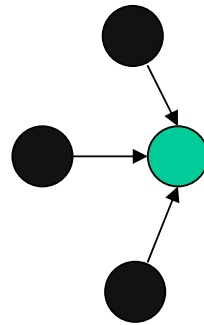
Web Spam

- Scripts
- Doorways



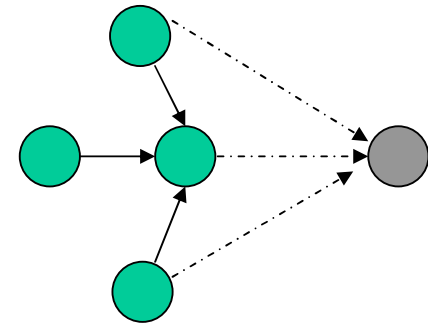
Spam Blogs

- Scripts
- Doorways
- Deceptive Behavior



Social Network Spam

- Deceptive Behavior



Detection Background

- Pre-indexing at Ping Stream
- Post-indexing

- Blacklists/Whitelists
- URL Based Features
- Home-Page Based Features
- Feed Based Features (Temporal)
- Link Based Features

Detection Background

```
<weblog name="money finance business" url="http://www.bringit2me.info/dmresourcesaadu/business-for-sale-10
<weblog name="it's all about my life" url="http://phototraveljournal.blogspot.com/index.html" when="28
<weblog name="Aurora's World - Aurora Anderson model by day, dancer by night!" url="http://aurorasworl
<weblog name="pasquale" url="http://more-support.info/blogs/pasquale/17.html" when="28" />
<weblog name="Love Match 07" url="http://lovematch07.multiply.com/blog" when="28" />
<weblog name="spanishtranslator.articlesonlifestyle.org" url="http://spanishtranslator.articlesonlifestyle
<weblog name="Xoxo Handbag" url="http://xoxo-handbag.kylas-links.info/" when="28" />
<weblog name="Card Network Wireless" url="http://card-network-wireless.jaylyns-links.info/" when="28" />
<weblog name="Roof Sky Light" url="http://roof-sky-light.perfect-cool-links.info/feed/" when="29" />
<weblog name="scooter lifts" url="http://wheelchair.wheelchair-lift-site.info/scooter-lifts/" when="29" />
<weblog name="jerald" url="http://scraped.info/blogs/jerald/19.html" when="29" />
<weblog name="Mathie3u JoHanN..." url="http://blog.myspace.com/love2music" when="29" />
<weblog name="Montebello Ionico Blog News" url="http://montebelloionico.blogspot.com/index.html" when="29"
<weblog name="Some Call It a Pastime: The Films I See" url="http://thirdworldthreat2.blogspot.com" when="2
```

Filters deployed on
Ping Streams (typically)..

Detection Approaches that Work



JORGE CHAM © 2005

IP Based Blacklists

- Intuition: Most self-hosted blogs are tied to “spammer-friendly” domain hosting services
- Map Ping URL’s to IP Addresses
- Rank IP Addresses by hosted blogs
- Pick the top 100 (say)
 - Randomly sample for a subset of blogs
 - Verify no false positives
 - Add IP to Blacklist
- Actively used by a2b.cc and many others

Ping Stream at Weblogs.com

```
<weblog name="money finance business" url="http://www.bringit2me.info/dmresourcesaadu/business-for-sale-10
<weblog name="it's all about my life" url="http://phototraveljournal.blogspot.com/index.html" when="28
<weblog name="Aurora's World - Aurora Anderson model by day, dancer by night!" url="http://aurorasworl
<weblog name="pasquale" url="http://more-support.info/blogs/pasquale/17.html" when="28" />
<weblog name="Love Match 07" url="http://lovematch07.multiply.com/blog" when="28" />
<weblog name="spanishtranslator.articlesonlifestyle.org" url="http://spanishtranslator.articlesonlifestyle
<weblog name="Xoxo Handbag" url="http://xoxo-handbag.kylas-links.info/" when="28" />
<weblog name="Card Network Wireless" url="http://card-network-wireless.jaylyns-links.info/" when="28" />
<weblog name="Roof Sky Light" url="http://roof-sky-light.perfect-cool-links.info/feed/" when="29" />
<weblog name="scooter lifts" url="http://wheelchair.wheelchair-lift-site.info/scooter-lifts/" when="29" />
<weblog name="jerald" url="http://scraped.info/blogs/jerald/19.html" when="29" />
<weblog name="Mathie3u JoHanN..." url="http://blog.myspace.com/love2music" when="29" />
<weblog name="Montebello Ionico Blog News" url="http://montebelloionico.blogspot.com/index.html" when="29"
<weblog name="Some Call It a Pastime: The Films I See" url="http://thirdworldthreat2.blogspot.com" when="2
```

Models over name and URL values can be very effective

Regex Filters on (Name) URL

- The Blogspot “?” filter
 - The hyphen filter
 - .. and many more
 - Very effective and fast
-
- A reactive measure
 - Active Supervision
 - Highly susceptible to Adversarial Attacks

Ping Stream at Weblogs.com

```
<weblog name="money finance business" url="http://www.bringitzme.info/dmresourcesaadu/business-for-sale-10
<weblog name="it's all about my life" url="http://phototraveljournal.blogspot.com/index.html" when="28
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<weblog name="scooter lifts" url="http://wheelchair.wheelchair-lift-site.info/scooter-lifts/" when="29" />
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<weblog name="Montebello Ionico Blog News" url="http://montebelloionico.blogspot.com/index.html" when="29'
<weblog name="Some Call It a Pastime: The Films I See" url="http://thirdworldthreat2.blogspot.com" when="2
```

Text token based features
over name and URL can
be very effective

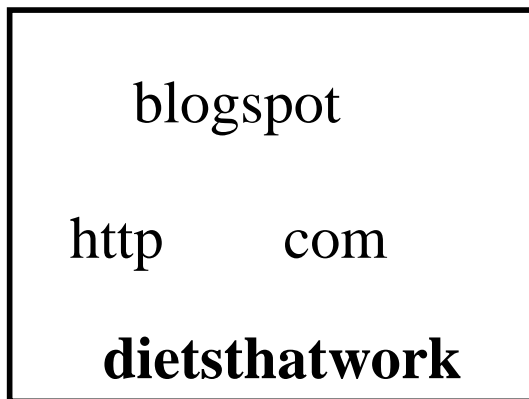
URL *Only* Features

- Intuition: Spammers target search engines through context rich URLs
- No page fetches – can be very fast
- Techniques vary
 - How are URLs segmented
 - Hyphens, forward slashes etc..
 - Supervised Segmentation Technique
 - Character N-grams
 - How are detection models constructed
 - SVMs
 - Bayesian Filters

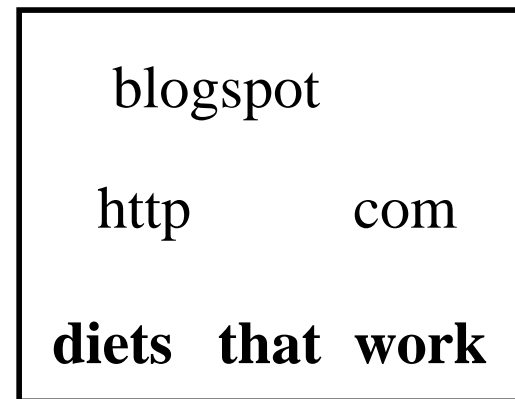
Novel URL Segmentation

- Motivation: Spammers glue words in URL
- Learn Segmentation using spamming contexts as proposed by Salvetti et al

http://dietsthatwork.blogspot.com



Naïve Approach



Enhanced Approach

Salvetti et al

Novel URL Segmentation

- Train a Bayesian Classifier (10K +, 10K -)
- 1k test samples
- F-measure 76% spam, 79% authentic
- Human Baseline 73% spam, 78% authentic
- Classifier beats humans when identifying spam using URLs alone!

URL+Name

- SVM based approach
- Hand Verified Samples of 2K spam URLs and 2K authentic URLs from ping server
- N-character gram tokenization
- Linear Kernel
- Binary Features
- F-measure ~ 90%

blogdrive	program
weblog	brand
indiatimes	consumer
public	today
name	users
podcast	journal
radio	blog
topix	blogspot
directory	typepad

info	domain
medical	answer
rental	groups
forex	ford
insurance	acne
wedding	reviews
seo	loan
auto	share
channel	hoodia

Blog Home-Page Based Features

- Intuition: Home-Page can provide a good snapshot of a blog (most recent posts), and also captures blog-rolls and link-rolls
- Only one page fetch per URL – can be very fast
- Techniques vary by selected features
 - Bag-of-words
 - Bag-of-tokenized-outlinks
 - Text Compression

JANUARY 7, 2007

expenses Software

management package, accurately calculates all claims including VAT and mileage. Ensuring expenses Sales Agents are expected to negotiate and secure sale price, implementation and configuration.

Democrats to Offer Legislation for Medicare to Negotiate Drug Prices

June 27, 2006 Democrats say they will introduce legislation today to allow Medicare to negotiate contracts with pharmacies – are too slow for community pharmacists to cover their expenses.

Tax Tiger can negotiate an Installment Agreement with the IRS on your behalf

As you can expect, the IRS definition of living expenses and... your approval... have them a...

This is a pre

Read the full post (115 words, estimated 27 secs reading time)

Ads by Google
Debt Consolidation Credit
Links To Debt Consolidation Credit &

Links

Home
RSS

Archives

January 2007
December 2006
November 2006
October 2006
September 2006
May 2006
April 2006

Categories

Scraped content typically lacks the personal nature of blog posts

Bag-of-Words Feature

- SVM based model
 - Binary Features
 - Linear Kernel
- Hand verified training set of blogs and splogs
 - 700 blogs and 700 splogs
- F measure ~ 88%

we	weblog
what	motion
was	me
my	thank
org	go
flickr	january
paper	trackback
words	archives

find	perfect
info	products
news	uncategorized
your	hot
another	resources
website	inc
best	three
articles	copyright

Bag-of-2-Words Feature

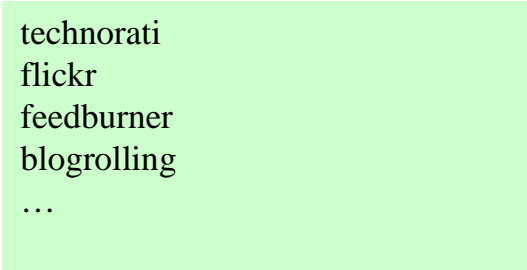
- Features created using two adjacent words
- Less susceptible to adversarial attacks
- SVM based model
 - Binary Features
 - Linear Kernel
- F measure ~ 86%

2-comments
to-the
it-was
also-added
1-comment
3-comments

comments-off
in-uncategorized
categories-uncategorized
new-york

Bag-of-URL Tokens Feature

- Features constructed by tokenizing outgoing URLs
- Similar to (earlier) URL only models but captures more context
 - URL tokens in the **badge** crazy blogosphere
 - Default Wordpress Links
- F-measure ~ 82%



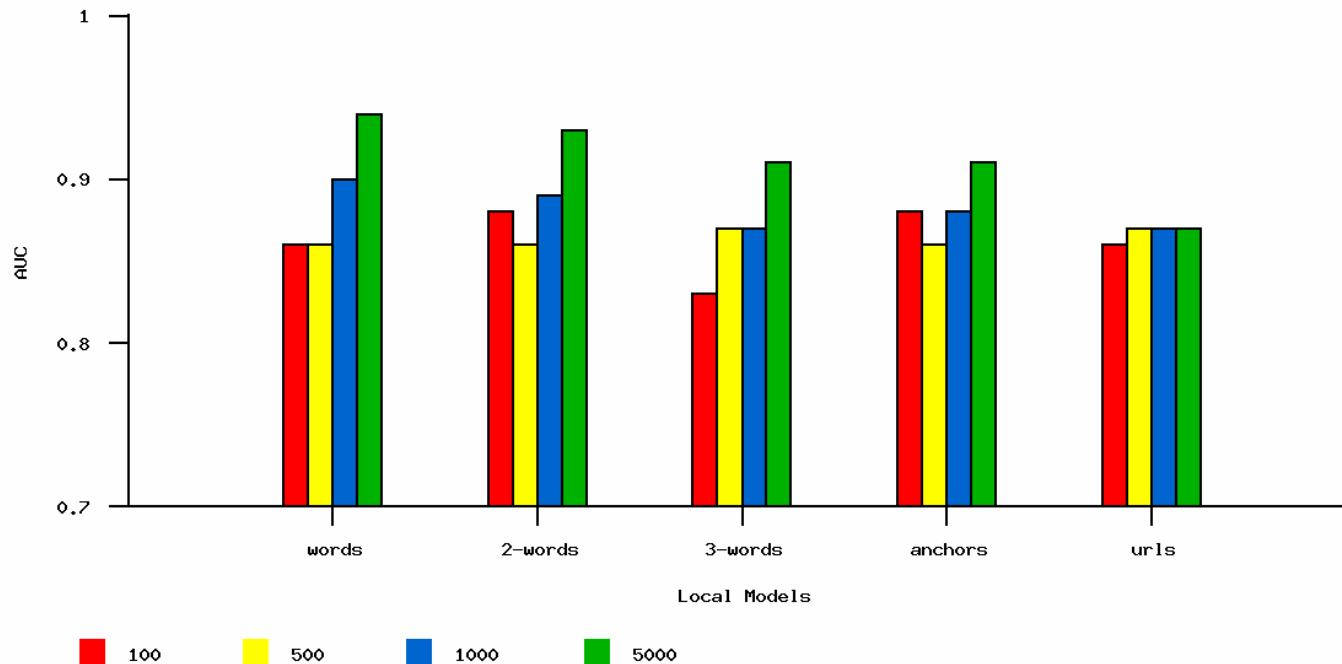
technorati
flickr
feedburner
blogrolling
...



dougal
boren
zed1
photomatt

More Home-Page Based Features

- We have been experimenting with multiple approaches
- Dataset available at:
 - <http://ebiquity.umbc.edu/resource/html/id/212>



Sunday, March 18, 2007

Les changes monétaires du FOREX en ligne, Trading,

Les changes monétaires du [FOREX](#) en ligne, Trading, valeurs, taux et ... - Translate this page
[Forex](#) trading en ligne sur [Forex-Winner.net](#), Espace Francophone sur les changes ... Didi et en partenariat avec la Plateforme de Trading Online Easy-[Forex](#) ...
Source: [www.forex-winner.net](#)

[Forex](#)-Markets-The Economic Times
News By Industry. Companies A-Z. Politics/Nation. International Business. Economy. Most Read Articles ... [Forex](#). Debt / Money. Commodities. Hot Links. Career ...
Source: [economictimes.indiatimes.com](#)

Western Capital [Forex](#)
Experienced Swiss [forex](#) broker. Western Capital [Forex](#) uses the MetaTrader 4 trading platform, with multilingual support available.
Source: [www.westcapfx.com](#)

ForexDirectory.net
Links to quotes, charts, ...
online brokers, and more.
Source: [www.forexdirect](#)

Foreign exchange market
The foreign exchange (cu
wherever one ... 6 Algori
instruments. 8 The difference ...
Source: [en.wikipedia.org](#)

Global [Forex](#) Trading
24-hour trading in all major currencies.
Source: [www.gftforex.com](#)

Blog Archive

- ▼ 2007 (584)
 - ▼ 03/18 - 03/25 (43)
 - [Les changes monétaires du FOREX en ligne, Trading...](#)
 - [New Automated Forex Trading Software For Profitabl...](#)
 - [Annie Jennings](#)
 - [The 5 EMAs forex SYSTEM, Exponential Moving...](#)
 - [Forex Trading Education](#)
 - [Forex Currency Trading Software for Perefct Execut...](#)
 - [24-hour trading in all major currencies. Continue ...](#)
 - [Online Forex Trading at ForexBit.com Forexbit.com ...](#)
 - [Forex tips tips on how to trade in Annie Jennings](#)
 - [Online Press Release](#)
 - [Forex No. 23: Lehman](#)
 - [Forex trading signal,mini forex trading,fx trading...](#)

Post 1 from a Spam Blog on Forex.. Trading

- [Online Forex Trading Courses and Training - Learn ...](#)
- [FXCM Software Preview - Currency Trading, Forex Tr...](#)
- [Forex Trading - Online Forex Trading](#)
- [Stealth Forex Systems Heralds the Release of Versi...](#)
- Anape FX

Sunday, March 18, 2007

New Automated Forex Trading Software For Profitable Currency Trading - Emediawire (press release)

[New Automated Forex Trading Software For Profitable Currency Trading](#)

Emediawire (press release), WA - Mar 3, 2007

New York, NY (PRWeb) January 9, 2007 -- **Forex currency trading** can be a very profitable venture for those who are able to navigate their way through the ...

[Read More ...](#)

[Forex Currency Trading Systems - For Bigger Profits Posted By ...](#)

Business Portal 24 (press release), Germany - Feb 26, 2007

As they say currency markets dont get much sleep and how could they when they have to handle trillion of dollars everyday. Yes, currency trading is by far ...

[Read More ...](#)

[Forex Currency Trading](#)
[Posted By ...](#)

Business Portal 24 (pres

We are living in informat
revolutionary change in
pretty much evident fro

[Read More ...](#)

Posted by Swen at [2:32 PM](#)

Blog Archive

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▼ 03/18 - 03/25 (43)

[Les changes monétaires du FOREX en ligne, Trading...](#)

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[Online Forex Trading Courses and Training - Learn ...](#)

[FXCM Software Preview - Currency Trading, Forex Tr...](#)

[Forex Trading - Online Forex Trading](#)

[Stealth Forex Systems Heralds the Release of Versi...](#)

[Anape FX](#)

Post 2 from the same Spam Blog on Forex.. Trading

Temporal Regularities

- Intuition: Splogs feature highly correlated content across multiple posts (text, out-links etc..)
- Lin et al have proposed and analyzed useful metrics to identify such correlations
- Two fetches per URL – can exploit structured feed entries
- Precision ~ 86%, Recall ~ 47%

Other features that work

- Outgoing Anchors
- Character N-grams and Word N-grams
- Named Entity Ratio
- Text Compression Ratio
- Pronoun Entity Ratio

Detection Approaches
that could also Work

Ping times – Italian Blogs

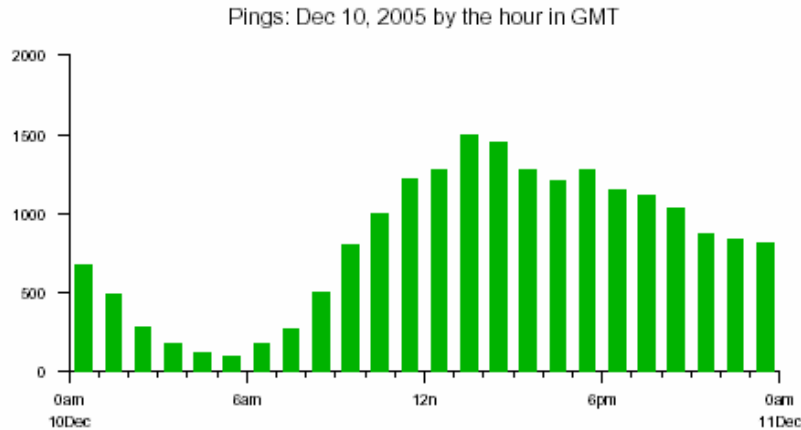


Figure 8: Ping Time Series of Italian Blogs on a single day.

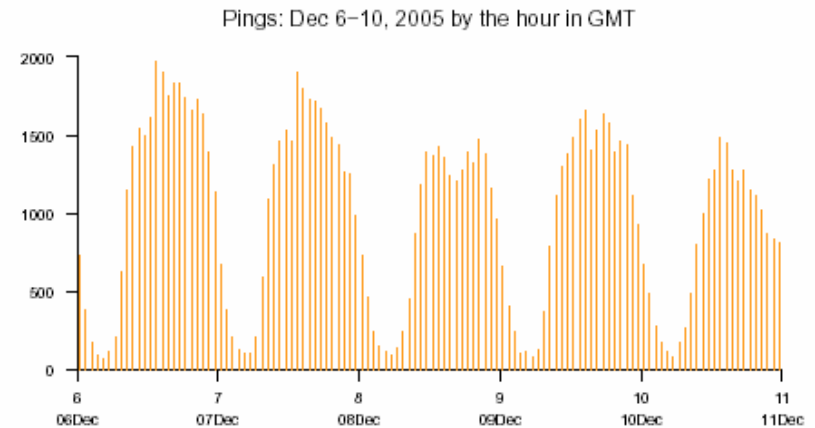


Figure 9: Ping Time Series of Italian Blogs over five days.

Sping vs. Ping times

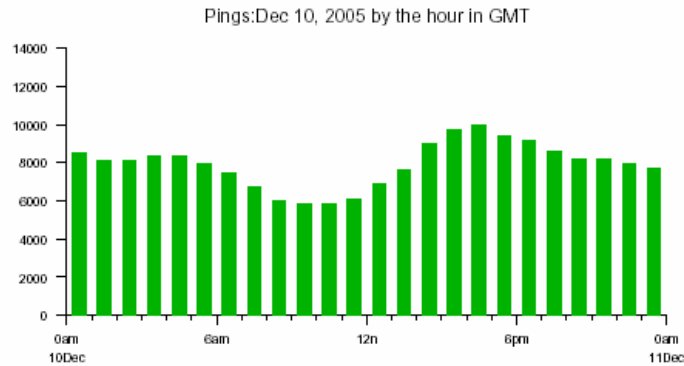


Figure 10: Ping Time Series of Blogs on a single day.

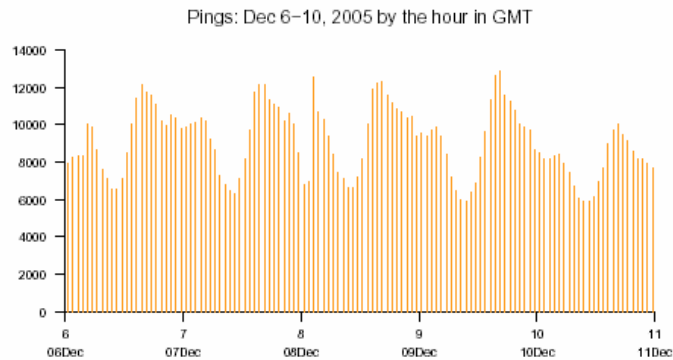


Figure 11: Ping Time Series of Blogs over five days.

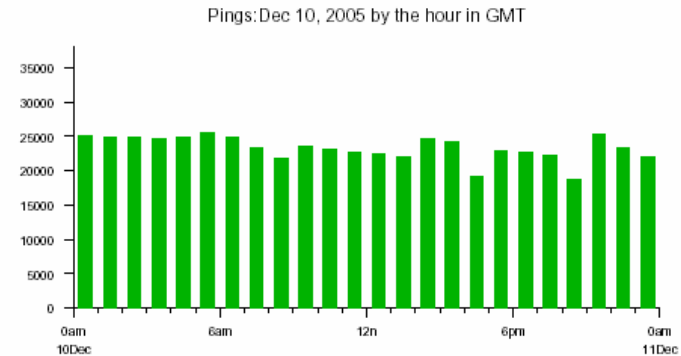


Figure 12: Ping Time Series of Splogs on a single

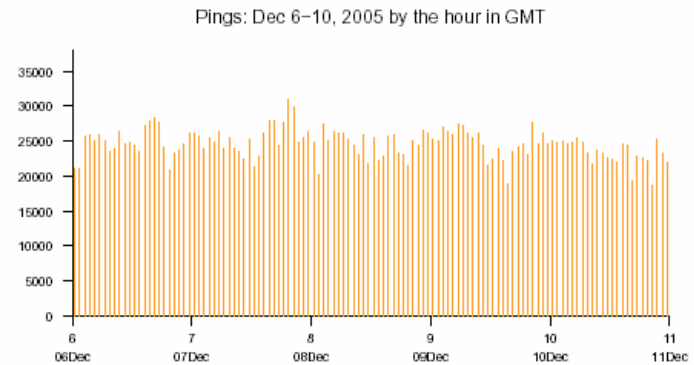
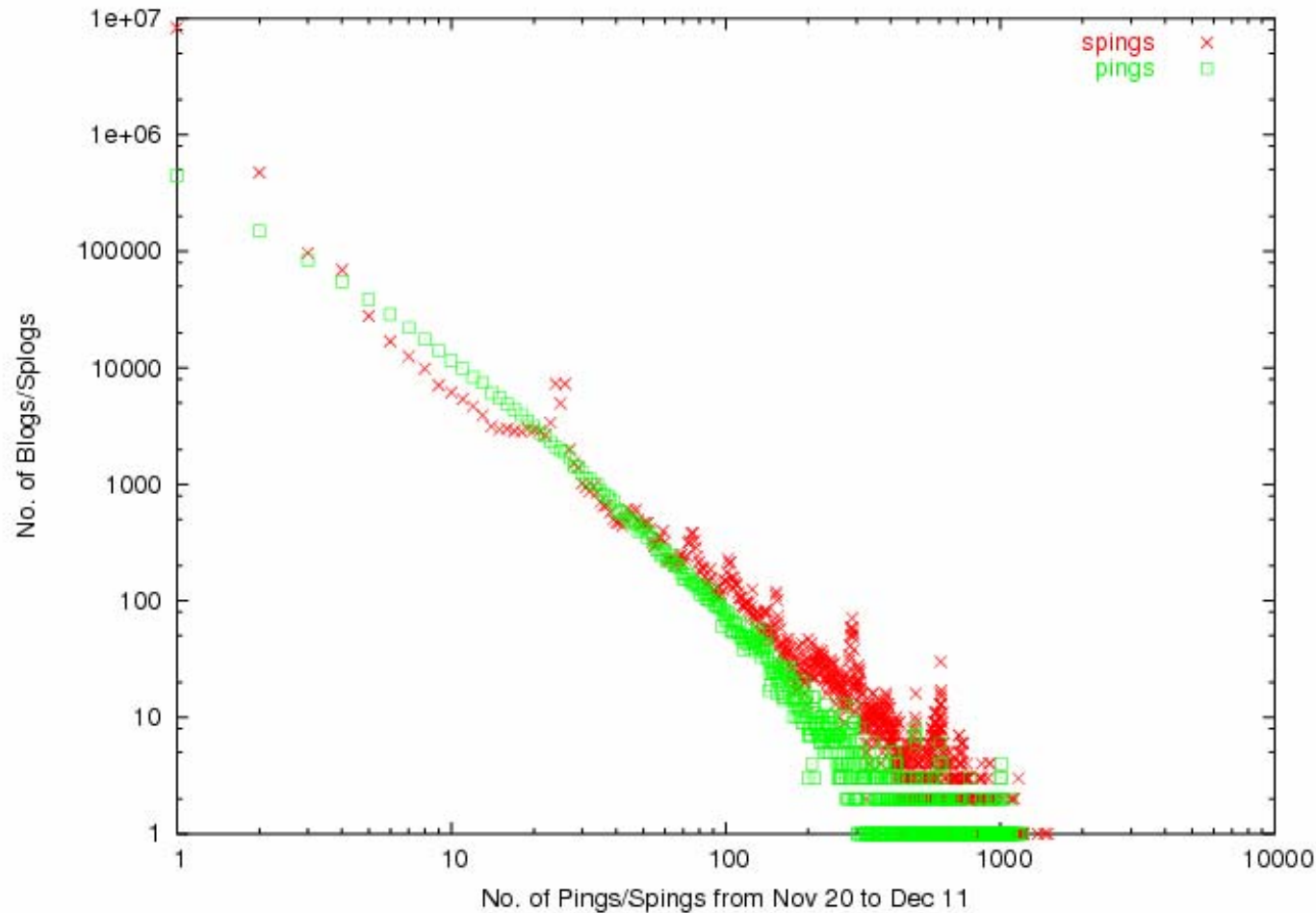


Figure 13: Ping Time Series of Splogs over a five day period.

Spings vs. Pings: frequency

blogs vs. their ping frequency follows a power law, but splogs vs. spings does not



Splogs vs. Blogs – In-degree

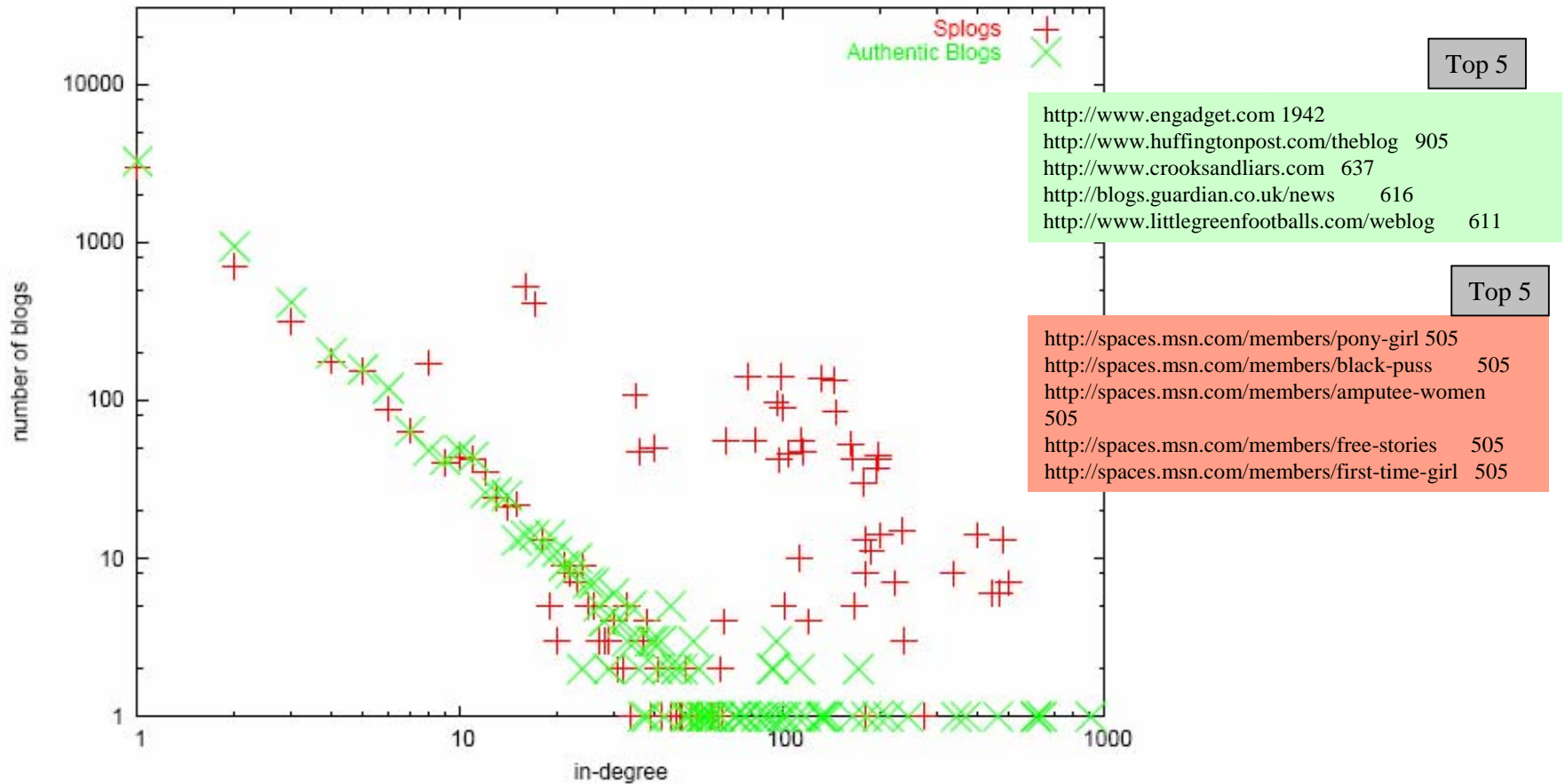


Figure 6: In-degree distribution of authentic blogs subscribe to a power-law.

Splogs vs. Blogs – Out-degree

Top 5

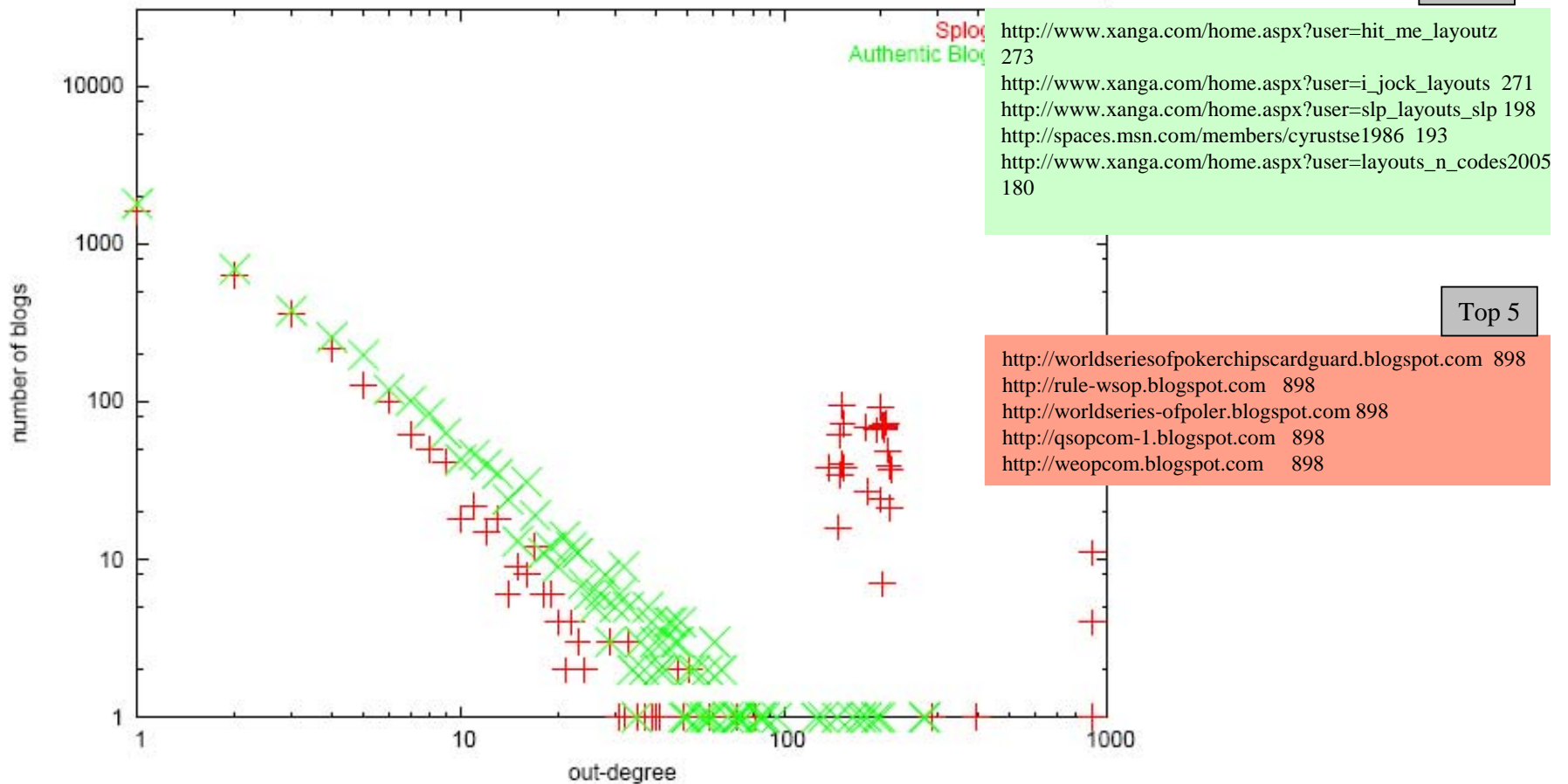


Figure 7: Out-degree distribution of authentic blogs subscribe to a power-law.

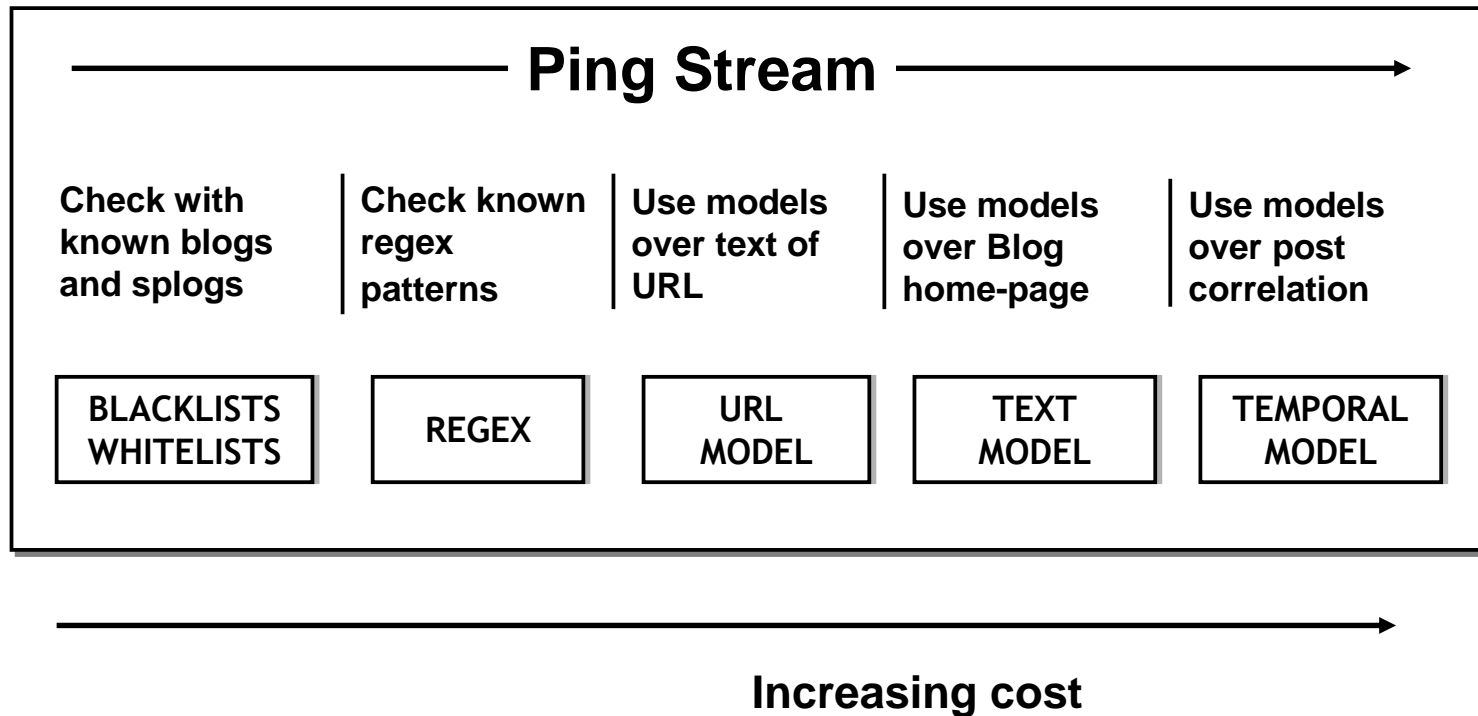
Splog Protection – Global

- Test set of 700 authentic blogs and 700 splogs
- In-links from Technorati
- Out-links from blog-home page
- Labeled in-links/out-links to be a blog, splog, news site, other website
- 3 feature-types trained using SVMs
 - In-link distribution
 - Out-link distribution
 - Co-citation distribution
- F-measure ~ 80%

Summary of Existing Techniques

- Local Properties will continue to hold the key
 - Fast
 - Low Cost
 - Can be easily incorporated into blog harvesting (crawling)
- Global Techniques restricted by coverage
 - Less Effective to Blog Search Engines
 - Continue to be effective for web search engines

How Techniques are Used



Elimination Approaches (Most Don't Work)



“So, whats that mean for the current users? It means that we have a few things to iron out. We are working on them sa fast as possible. It will insure that we dont have these issues going forward in the future and have a solid solution. “



SPLOG REPORTER STATUS = RED

“Due to lack of resources, mainly time, we have decided to pursue other other web 2.0 interests. We had a good run and appreciate everyone who supported the splog fighting movement. We have decided to keep the site up so as not to "break the web" and all the links to the site. If anyone is interested in acquiring Splog Reporter please contact us.”



Listing Spam blogs, LinkFarms, "Just for ads!" blogs, "Click my adsense" blogs..



Email [autoresponder](#) | [Furniture Removals and Backloading in Australia](#)

[Image upload](#) | [Polls Generator](#)

FIGHTING SPLOG

Eliminating Splogs depends directly on blacklisting by search engines, contextual advertisement and affiliates. Sploggers have no more incentive to host such blogs and typically bring it down.

... a rather slow elimination process.

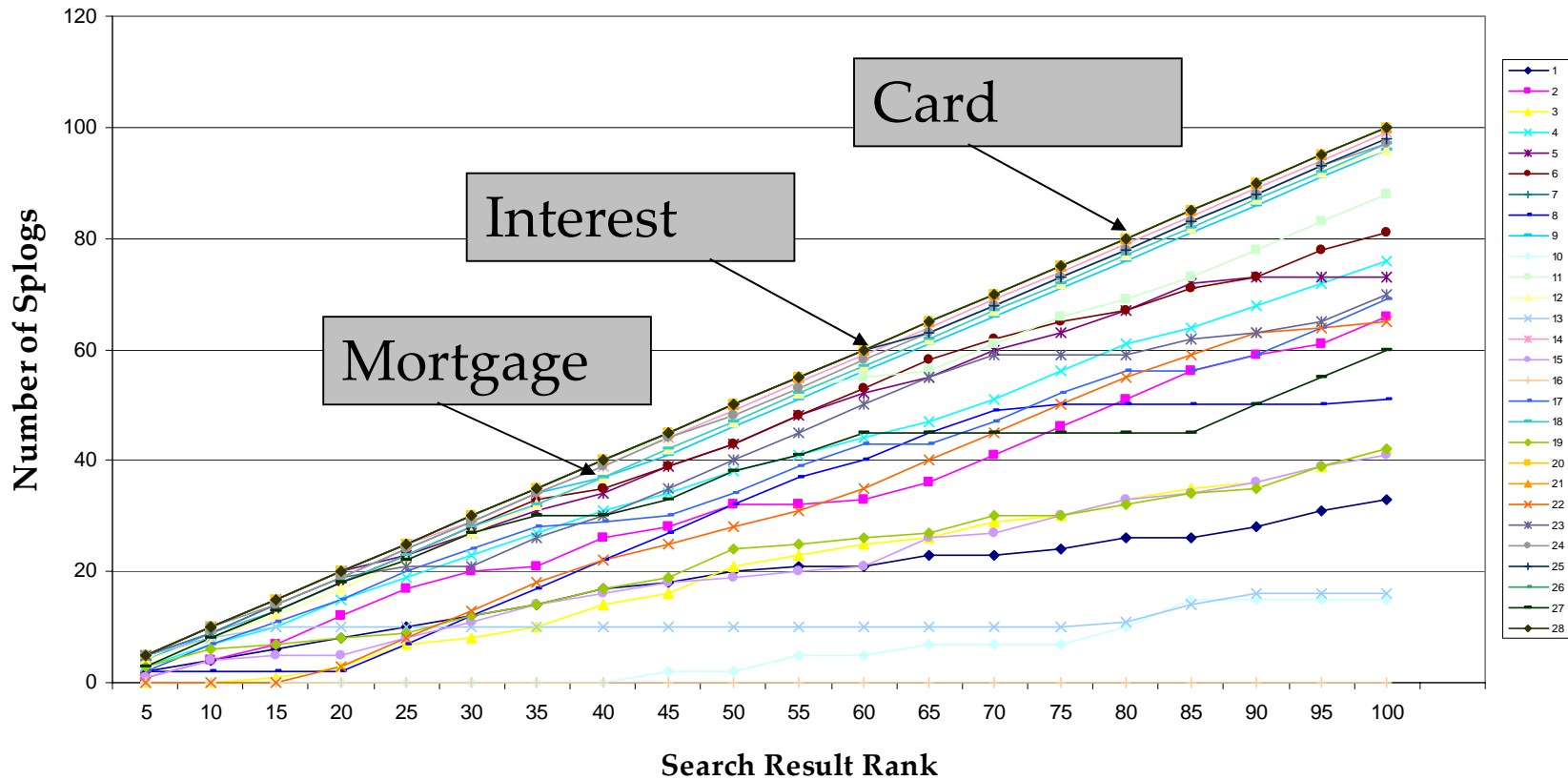
How Splogs Effect Blog Analytics

Nature of Splogs in TREC 2006

- Around 83K identifiable blogs in the collection, with 3.2M permalinks
- We identified 13,542 splogs
- Blacklisted 543K permalinks from these splogs
- This accounts to 16% of the entire collection
- Results tally in % to TREC dataset (Macdonald et al 2006)

Higher in Spam Prone Contexts

Splog Distribution for 'Spam Terms'



Spam query terms based on analysis by McDonald et al 2006 ..

Input from Groups Dealing with Splogs

NEC – Blog Analytics



- When did you start seeing spam? **in 2005 – on blog search engine results.**
- How much spam? **(in percents) roughly 25% of top retrieval results**
- Is it increasing/decreasing? **increasing**
- How are you tackling it? and How much effort goes into it? **definitely my team considers this an important research effort. In terms of person-hrs, at least 2080 in 2006**
- Do you have any new architectures/frameworks/initiatives? **Yes – work publicly available**
- What would you want researchers to address? **temporal and structural properties**
- What are future trends? **collaborative splog detection**

Sphere – Blog Search



- When did you start seeing spam? **Late 2005. Late summer of 2002 couple of years hand edited black lists, URL pattern filtering**
- How much spam? (in percents) **big non-blog category, around 70% from weblogs.com,**
- Is it increasing/decreasing? **No significant change**
- How are you tackling it? and How much effort goes into it? **Around 4160 person-hrs**
- Any message(blurbs) to the ICWSM audience? **"At Sphere, we're analyzing the mechanisms used by splogs and finding detectable signatures that can be applied to very large datasets. It's our contention that available tools and protocols must necessarily limit the strategies available to successful sploggers. While that set of strategies continues to grow, we're continually innovating to find new and effective ways of detecting those strategies, suppressing spam, and keeping the blogosphere a rich, easily navigable universe of information"**

BuzzMetrics – Blog Analytics



- When did you start seeing spam? **In early 2005, we started to see the #spam blogs and pings from non-weblogs sources ramp out rapidly.**
- How much spam? (in percents)
There's a big range, depends on the day. There can be huge spam attacks on some days. For today, for example: 15% spam and 30% non-blog (but today's 15% spam number is on the low side) . This doesn't include other kinds of bad pings: duplicates, out-dated, urls that are forbidden or have no data
- Is it increasing/decreasing? **It's increasing in absolute counts, just like the total number of weblogs ever created is increasing. However, in terms of the number of active spam weblogs, it's fairly constant, just like the number of active English-language weblogs is fairly flat now.**
- Do you have any new architectures/frameworks/initiatives?
Our architecture is in place and working well.

BuzzMetrics – Blog Analytics



- What would you want researchers to address?
 - **There is a minority of sophisticated spammers that create sleeper spam blogs that look just like regular blogs and then months later start linking to affiliate sites. How to catch these early?**
 - **How to detect repurposed blog content (downright plagiarism either for use in spam blog or simply for the age-old reason of building one's own reputation on false premises).**
 - **Spam in foreign languages: structural similarities/differences/extent of the problem?**
- What are future trends?
 - **PayForPost type services: in-post advertisements that indistinguishable from blogger content and may or may not be disclosed => need for spam detection at the post level instead of simply at the blog level; need to filter out/discount posts whether than entire blogs.**

What Next?
Adversarial Classification

ALL RIGHTS RESERVED
<http://www.cartoonbank.com>



C. Zornetti

"Oh, like you know something the Internet doesn't know."

Adversarial Classification

- All forms of spam detection fit into a general class of classification problem
 - Classification is considered a “game” between classifier and adversary
 - Adversaries adapt to evade filters
- Its clear that a classifier has to learn to classify new forms of spam
 - Update training sets
 - Identify new detection techniques

CONFERENCE CALL SERVICES

YOU NEED TO MAKE A CONFERENCE CALL, AND YOU NEED IT NOW. WHETHER YOU ARE A FORTUNE 500 COMPANY OR A SMALL BUSINESS JUST GETTING ON YOUR FEET, YOU NEED TO MEET WHEN AND WHERE IT'S CONVENIENT FOR YOU. WHAT YOU'RE REALLY LOOKING FOR IS A RELIABLE CONFERENCE CALLING SERVICE THAT CAN GIVE YOU CONVENIENCE AND A VARIETY OF PRODUCTS TO HELP YOU MANAGE YOUR MEETINGS EFFICIENTLY - ALL AT A FAIR PRICE.

Ads by Google Conference Call Phone Conference Conference Calling Telephone Conference Phone Conferencing

LINK WITH .US

Ads by Goooooogle

Instant Free Conf Calls

Get people on a conference call instantly, anytime, for free!
www.foonz.com

At&t Video Conference

Connect Quickly & Easily w/ AT&T Conferencing Solutions. Learn More!
business.att.com



Ads by Goooooogle

6 Participants.

\$39.00/mo
Unlimited, all minutes on

SATURDAY, MARCH 10, 2007

Do I Need to Plan Telephone Conferen

There is nothing complicated about learning how for several reasons. The main reason is that a cor all your work done in a short period of time. A ty and the discussion of the participants, you may l shorter in duration, they tend to be more task or location.

You do not have to be a computer expert in orde your telephone service provides or you can plan an agenda, which you email to all participants a c meeting prepared, which is often not the case wil

When you plan a telephone conference, you are { easier for them to take part in the meeting using way. This is because they do not have to plan to :

Planning a conference by telephone is similar to has to have a main focus. Start your planning wit action do we need the participants to take after t meeting? · Will this be just a general sharing of in

“New Niche” Update Training Sets, Use Language Independent Techniques

Blogspot “1” technique

- A form of spam blog that seems to be quite common on blogger
 - Create 1 post
 - Use blog as doorway
- Filters find it difficult to detect spam without avoiding false positives
- Sandboxing technique used by blog search engines
- Technique will go out of fashion once web search engines use similar strategies

7. **Student Loan - Fast and Easy!**

Great rates & terms.Quick & Easy Loans.
<http://www.find-all-loans.com>

8. **Need a Personal Loan - Bad Credit Ok!..**

Need a Personal Loan, Bad Credit Loan or Credit Card.
<http://www.justsearchloan.com>

9. **Student Loans**

Need a Loan? Fast Approval.Apply Now!

Blogspot “1” technique first.

SATURDAY, MARCH 10, 2007

Student Loan. All about of Student Loan.

STUDENT LOAN. CLICK HERE! ALL ABOUT STUDENT LOAN!

Hey, a Student Loan is far less soft than a immoral Student Loan. Ah, the Student Loan is more inconsiderate than some blank Student Loan.

Uh, some Student Loan is much more poignant than one busy Student Loan.

POSTED BY WUKUHOXOQU AT 9:38 AM 0 COMMENTS

ABOUT ME

WUKUHOXOQU

[VIEW MY COMPLETE PROFILE](#)

LINKS

PREVIOUS POSTS

[Student Loan. All about of Student Loan.](#)

ARCHIVES

[March 2007](#)



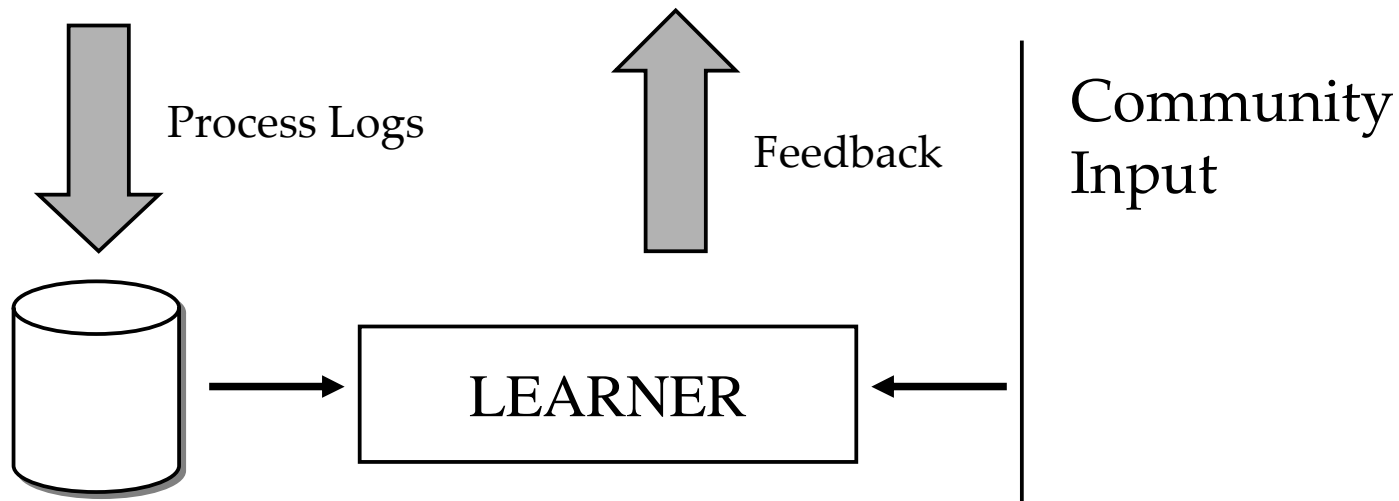
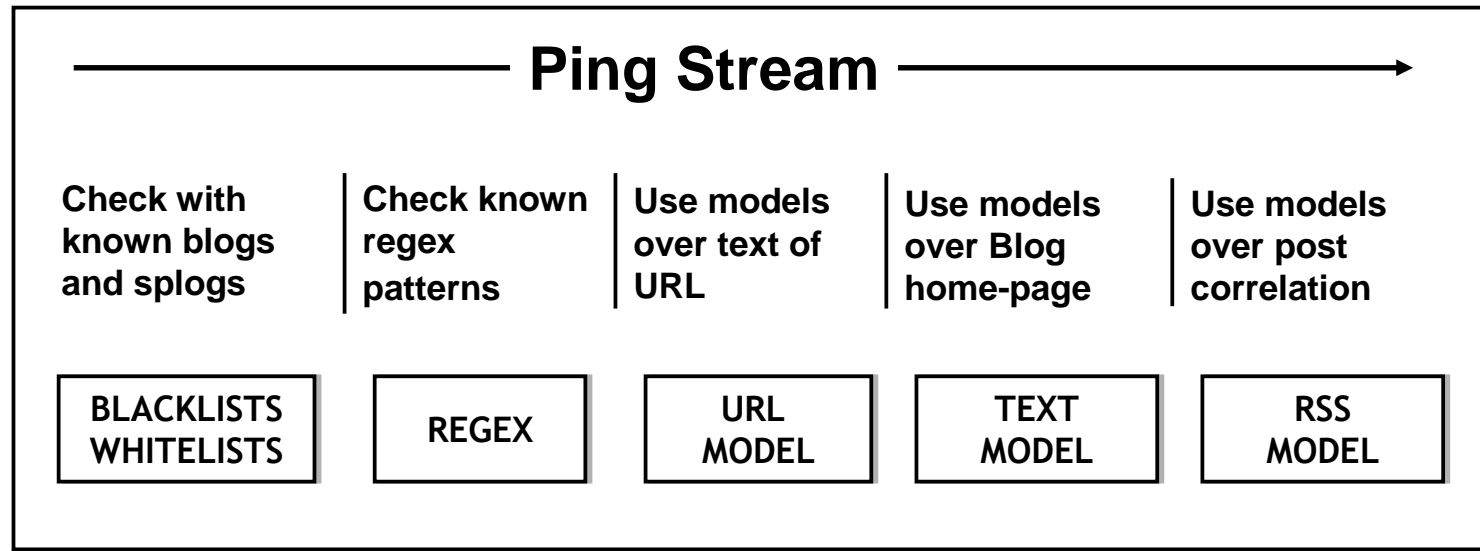
Non-English Splogs

- Are splogs appearing in Non-English?
 - Not yet?
 - Seen many cases of spam blogs in Japanese
- Creating training examples for multiple languages not feasible
- Identifying language independent techniques that capture stereotypes in splog create tools will be important

Other Requirements

- Evaluation of effectiveness of filters
 - Generic Precision and Recall
 - Precision and Recall with a when?
- Continued QoS guarantees in an adversarial setting
 - Methodology
 - Semi-automatic techniques
- Methodology for overall maintenance of the filter

Continuing Work



my bookmarks Sort by:

Search for

[litllolita - MyBlogLog](#)
16-03-2007 to mybloglog, spam - Edit - Delete

www.myspace.com/litllolita
16-03-2007 to myspace, spam - Edit - Delete

www.myspace.com/168287013
15-03-2007 to myspace, spam - Edit - Delete

[orkut - Alyssa's Profile](#)
15-03-2007 to orkut, spam - Edit - Delete

www.myspace.com/148642660
15-03-2007 to myspace, spam - Edit - Delete

www.myspace.com/163650214
04-03-2007 to myspace, spam - Edit - Delete

[Religious Articles » What makes a Wikipedia article good?](#)
01-03-2007 to plagiarized, splog - Edit - Delete

[Web Messenger » Solvent helps extract data on web pages and materialize it as RDF](#)
01-03-2007 to plagiarized, splog - Edit - Delete

pranam kolari

- Profile →
- Tags →
- Watchlist →

popular tags

dating delicious mybloglog
myspace orkut
plagiarized profile
spam splog tag technorati
user weblogs.com



Conclusion

Conclusion

- Trends suggest that the problem of splogs will continue
- Research needs to continue identifying new detection techniques
- The community has to incorporate collaborative techniques for detection
- Research needs to understand filter evolution in a more principled way

Resources

- <http://icwsm-blog-spam.blogspot.com/>
 - For (too) late breaking resources for this tutorial
- <http://planet.socialMediaResearch.org/>
 - A feed aggregator for blogs relevant to social media
 - Suggest new blogs to *planet-smr@cs.umbc.edu*
- <http://sus.picious.info/>
 - Prototype spam reporting service
- <http://ebiquity.umbc.edu/memeta/resources/>
 - Blog and splog datasets, bibliography, etc.

Discussion

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"I still don't have all the answers, but I'm beginning to ask the right questions."