

UNIVERSITY OF BIRMINGHAM | ALAN TURING INSTITUTE

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Research focus

[1] The impacts of the digital economy on spatial structure, cities and urban economies

[2] Urban analysis and big data

Current research

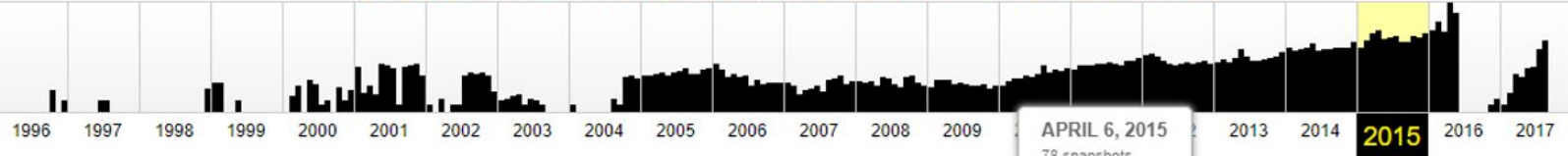
- **Aim:** micro-processes, which underpin how the internet affects cities and urban economies
- Beyond (aggregated) connectivity measures
- Web archives: The Internet Archive
 - The largest archive of webpages in the world
 - 273 billion webpages from over 361 million websites (1996 -)
 - A web crawler, snowball sampling
 - Time-stamp
- **Funded by:** ESRC, CDRC, UoB/BRIDGE, ATI

Explore more than 304 billion web pages saved over time

Saved 229,470 times between October 19, 1996 and August 21, 2017.

[Summary of bloomberg.com](#)

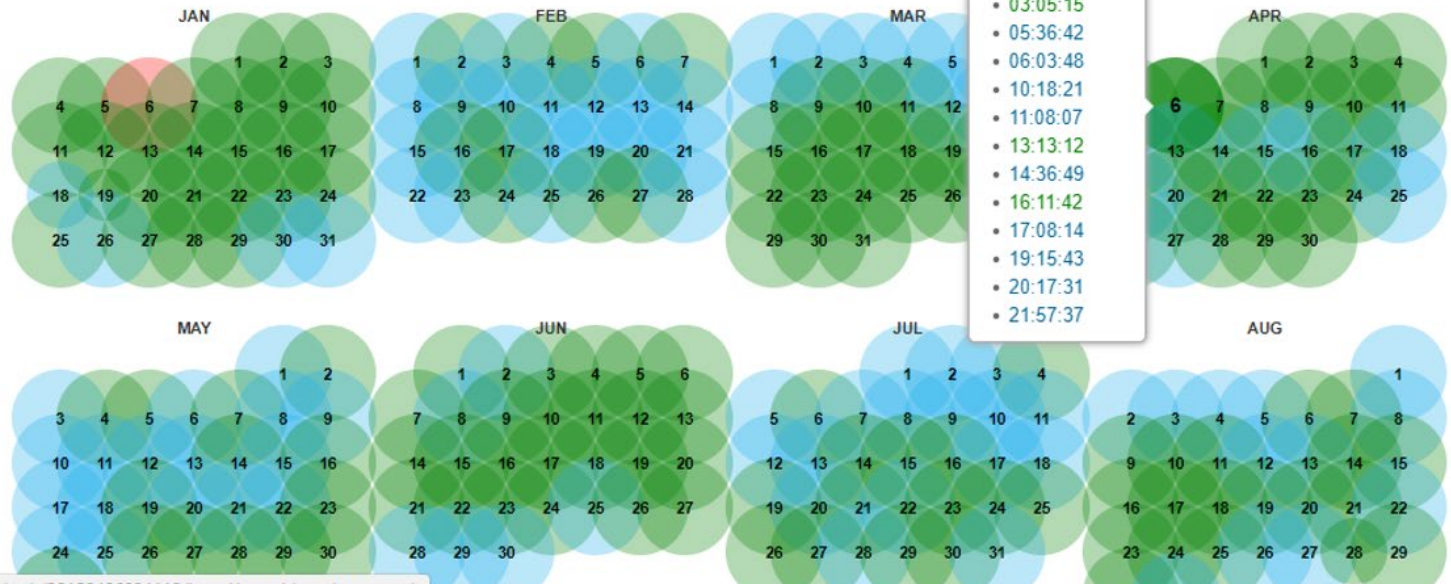
PLEASE DONATE TODAY. Your generosity preserves knowledge for future generations. Thank you.



Sun, 26 Apr 2015 07:23:03 GMT (why: webwidercrawl, widercrawl)

APRIL 6, 2015
78 snapshots

- 00:41:18
- 02:12:40
- 03:05:15
- 05:36:42
- 06:03:48
- 10:18:21
- 11:08:07
- 13:13:12
- 14:36:49
- 16:11:42
- 17:08:14
- 19:15:43
- 20:17:31
- 21:57:37



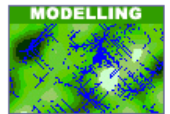


Research

Browse the research themes on the right, or select a project below.

[30 Days in ActiveWorlds](#)
[3D Cities Review](#)
[A Virtual Exploration of the Lost Labyrinth](#)
[Agent-Based Models](#)
[Atlas of Cyberspace](#)
[Cellular Automata \(CA\)](#)
[Definition of Town Centres](#)
[Design Methods and Planning Processes](#)
[Digital Egypt for Universities](#)
[Dynamic Settlement Simulation Modelling](#)
[E-Society](#)
[ESPON](#)
[Epidemic Modeling](#)
[Geographies of Citation](#)
[GIS TiMELiNE](#)
[Hackney Building Exploratory Interactive](#)
[Irregular Cellular Automata](#)
[London Bridges](#)
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[Monitoring Urban Land-Use and Morphology](#)
[Networks and Cities](#)
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[Notting Hill Carnival](#)

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[Shared Architecture](#)
[Spatial Decision and Planning Support Systems](#)
[SprawlSIM](#)
[Surface Network Modelling](#)
[Sustainable Town Centres](#)
[The Retail Environment](#)
[Town Centres: Defining Boundaries for Statistical Monitoring - the London study](#)
[VENUE](#)
[Virtual Cities Resource Centre](#)
[Virtual London](#)
[Virtual Prospectus](#)
[Virtual Reality as an Interface to Geographic Information](#)
[Wired Whitehall](#)
[Woodberry Down Regeneration Project](#)



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DATA RECOVERY

DOWNLOADS

We Develop your Site with
**Client Side,
Server Side &
Multimedia**
Development Technology



network
services

Geeksnerds Ltd., a company based in London and Birmingham, specializes in organic Search Engine Optimization (SEO), data recovery services, IT support, Website Design and Web Development. We provide fastest, reliable, cost effective and success building solutions for your business.



SEARCH ENGINE OPTIMIZATION (SEO)

Geeksnerds Ltd specializes in Organic Search Engine Optimization (SE), Search Engine Marketing (SEM) and Internet Marketing. We aim to increase your website traffic by providing expertise of SEO and internet marketing. We have expert staff for search engine optimization. If you are not getting satisfactory results from your current internet marketing campaign...

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ENQUIRY FORM



PRICING DETAILS

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Current research

Data

- JISC UK Web Domain Dataset: all archived webpages from the .uk domain 1996-2012
- Curated by the British Library
- Geindex: a subset of the .uk archived webpages which contain a UK postcode
- 0.5 billion URLs with valid UK postcodes

20080509162138/http://uk.eurogate.co.uk/contact_us IG8 8HD

Current research

Research questions and findings

- Does the availability of **local internet content** attract individuals online?
 - Spatially match a large population survey (BPS) with aggregated measures of web content, MLM
 - Importance: digital divide policies
 - R&R CEUS
- Does the **early adoption** of web technologies affect regional productivity?
 - Productivity paradox, deep lags, econometric modelling
 - Importance: new rounds of infrastructure roll-out e.g. 5g
- Can we use web data to understand the **clustering of economic activities** in space?
 - Shoreditch in East London / Silicon roundabout
 - Text from commercial websites geolocated in Shoreditch, NLP
 - Importance: more detailed than SIC

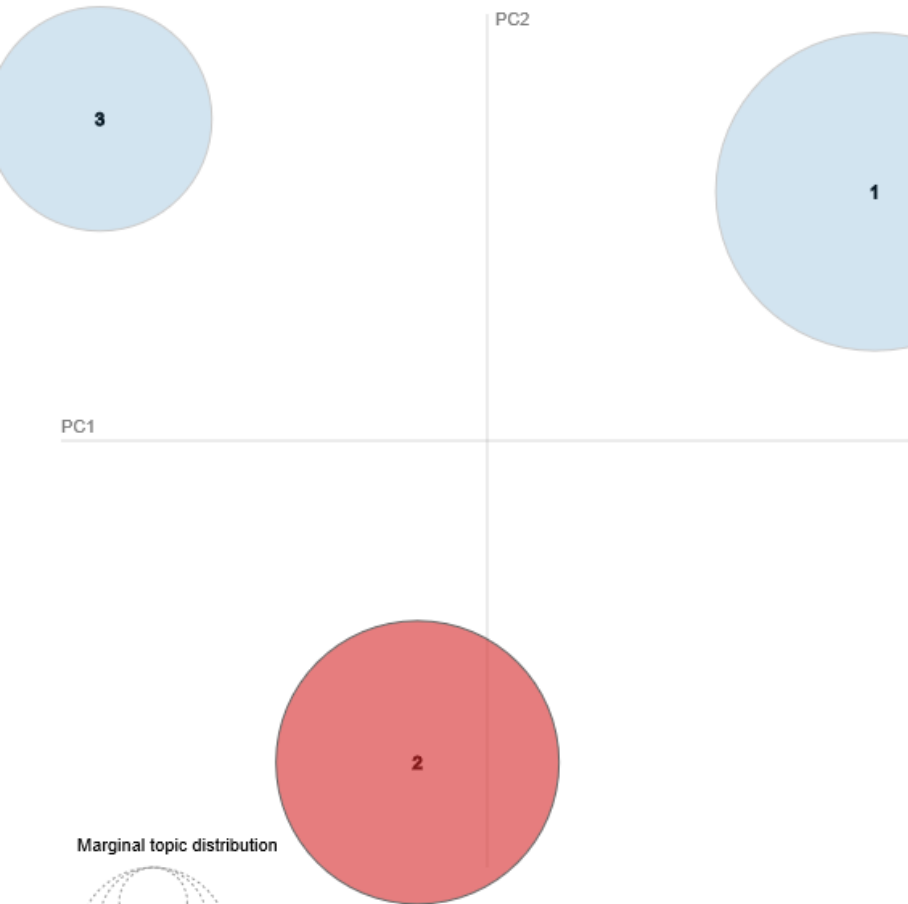
Selected Topic:

Slide to adjust relevance metric:⁽²⁾

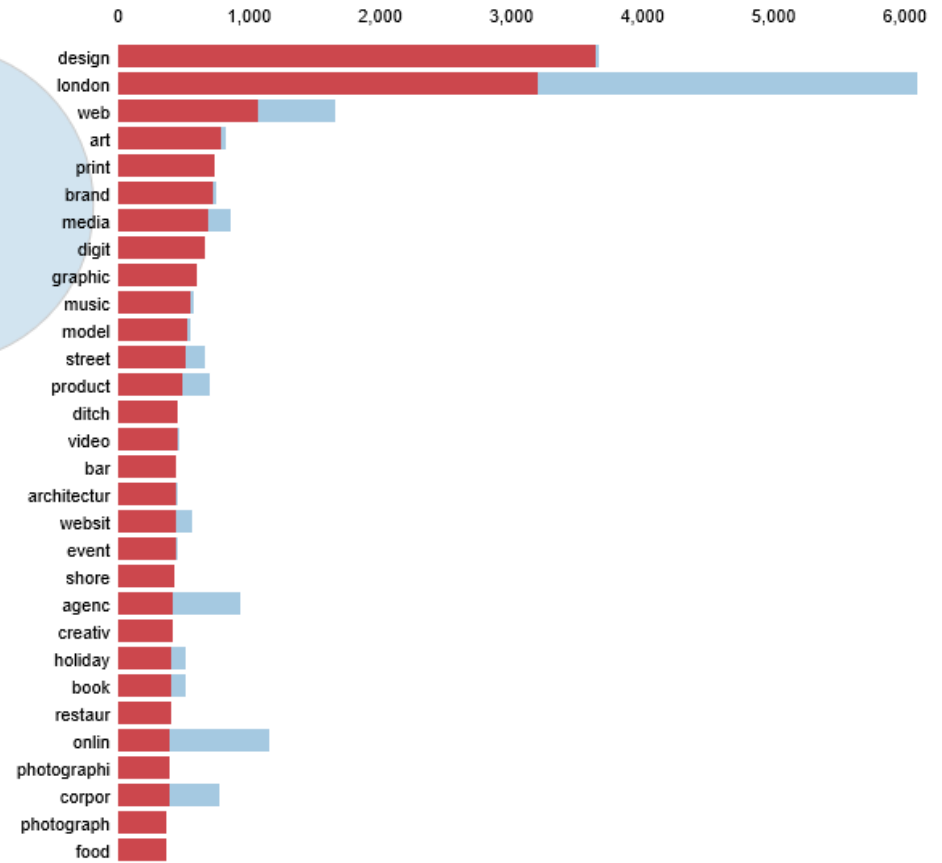
$\lambda = 1$



Intertopic Distance Map (via multidimensional scaling)



Top-30 Most Relevant Terms for Topic 2 (94.6% of tokens)




Overall term frequency

Estimated term frequency within the selected topic

1. saliency(term w) = frequency(w) * [sum_t p(t | w) * log(p(t | w)/p(t))] for topics t; see Chuang et. al (2012)

2. relevance(term w | topic t) = $\lambda * p(w | t) + (1 - \lambda) * p(w | t)/p(w)$; see Sievert & Shirley (2014)



 Airplane mode off

Squatters – illegal use of our address

Help prevent fraud

Illegal use of our mail box services

As one of the leading virtual office address providers in London, we are determined to prevent fraudsters and squatters who use our mailbox service for illegal purposes or without our consent. Squatting is a term whereby people use display our address on their correspondence materials such as websites, business cards, letters heads and have not been given any consent. In most circumstances they are using this for illegal activity.

Latest Identified Squatters:

- 4 Sold
- Atroni Design Ltd
- Best Accessories UK
- Case Stop Ltd
- Centre for Medical Science
- Control Your Credit UK
- EHIC Services Europe
- Fraser Tores Property
- GCR Capital
- Gettickets.co
- Instant Lending
- JPD Tree and Garden Services
- Lloyd Loom Spalding
- Prime Brokerz
- Recruit Network
- Status Hair
- Zuum Hoverboards

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Future research plans

Digital archives, an exciting, but underutilised data source for urban science

- Contextual knowledge about cities
- Urban analytics and digital humanities
- Dynamics of cities and their interrelation with the digital economy
 - Match business records with archived web content: business dynamics, business outputs ~ digital technologies
 - Business clusters and how they change
 - Urban neighbourhoods and their functions e.g. Knowledge Quarter in London
 - Local institutional environment in UK cities and its data openness (UK Government Web Archive)
 - Diffusion of the production of online content over space and time
 - Geolocation of web content
 - Other territories: e.g. Australia