

A personal introduction

Introduction to Network Science

Carlos Castillo

Topic 01



Universitat
Pompeu Fabra
Barcelona

Why network science
is important **to me**

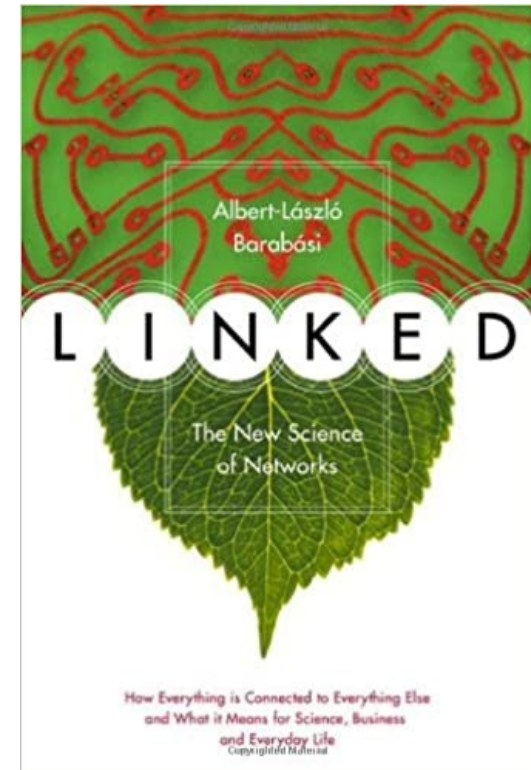
PhD work (2000-2004)

- Collecting web pages
- Characterizing national web domains
 - Chile, Korea, Greece, Spain ...

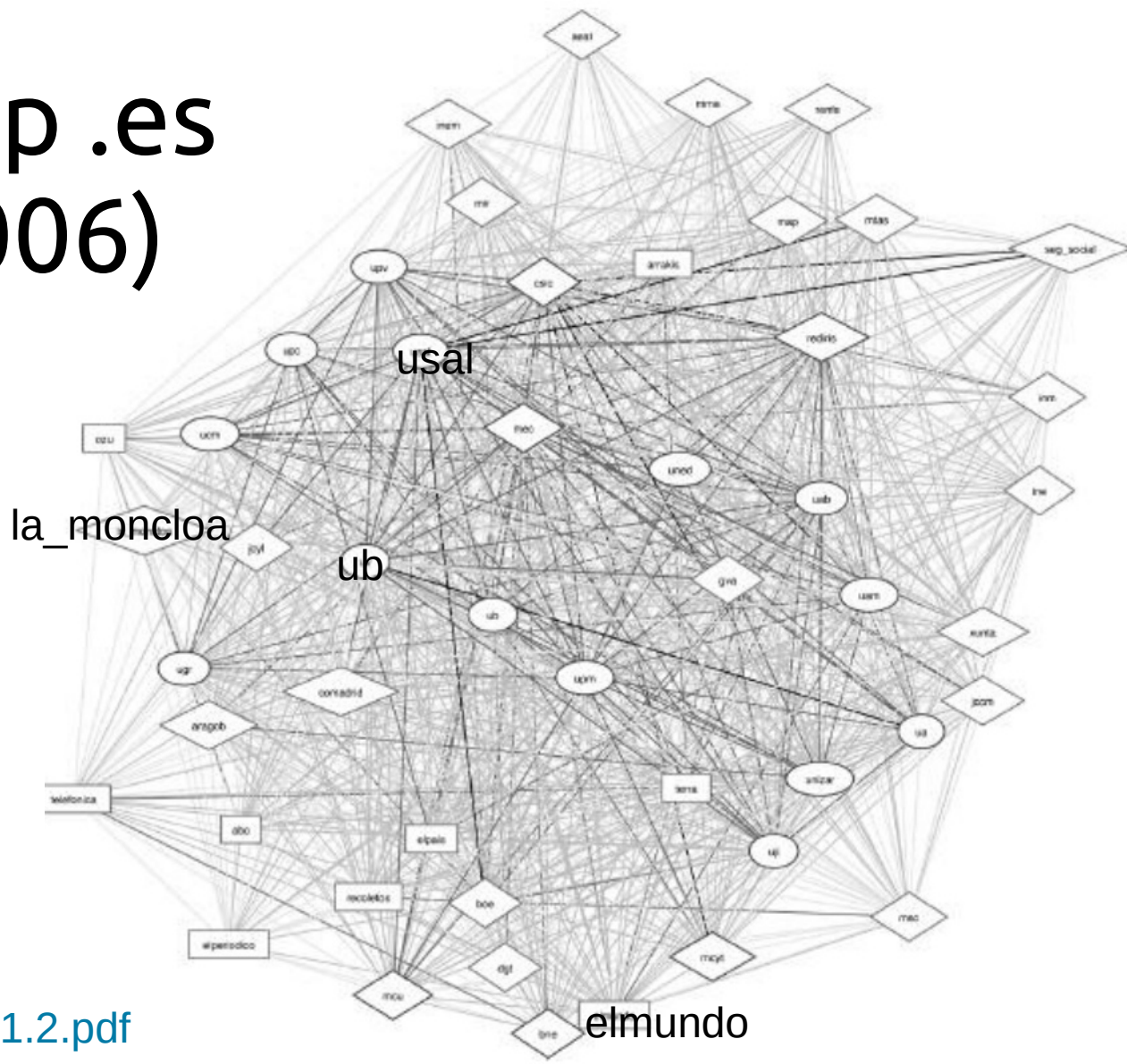
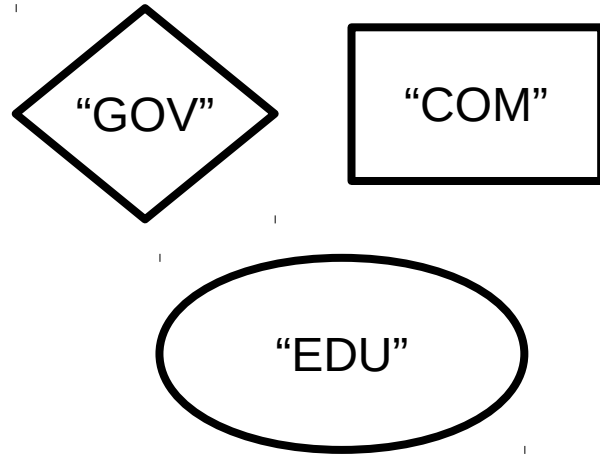
An influential book (to me)

This book came out in 2002 and made me see networks everywhere; it's an easy read, written for the general public, highly recommended

And Barabási at some point visited my university **in Chile!**

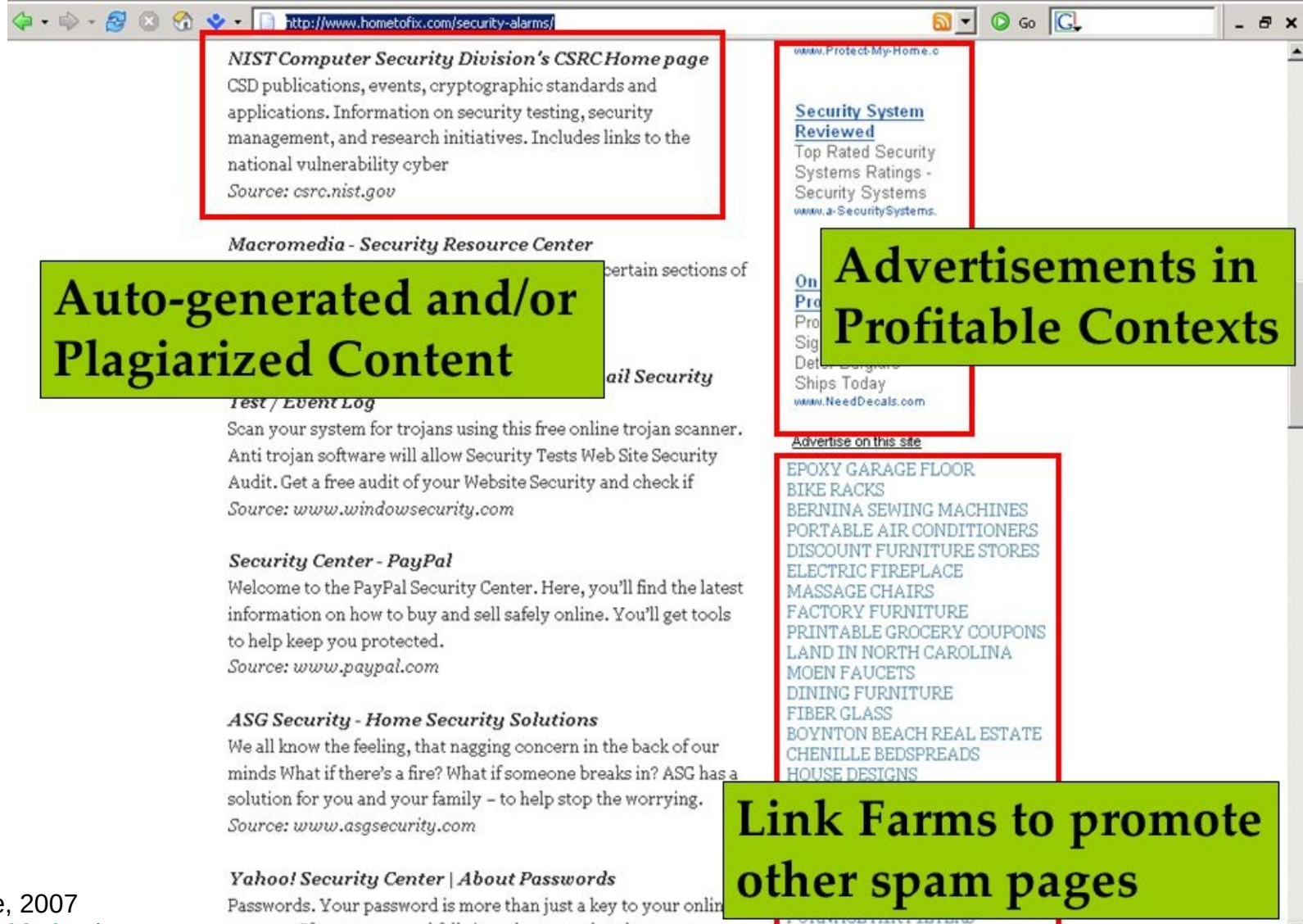


My work on top .es domains (~2006)



Post-doctoral work (2005-2009)

- Web spam pages
 - Pages created to deceive search engines
 - Attract traffic by stuffing themselves with keywords
 - Increase link score of other pages
 - Methods evolve all the time, how to catch them?



An Eureka! Moment

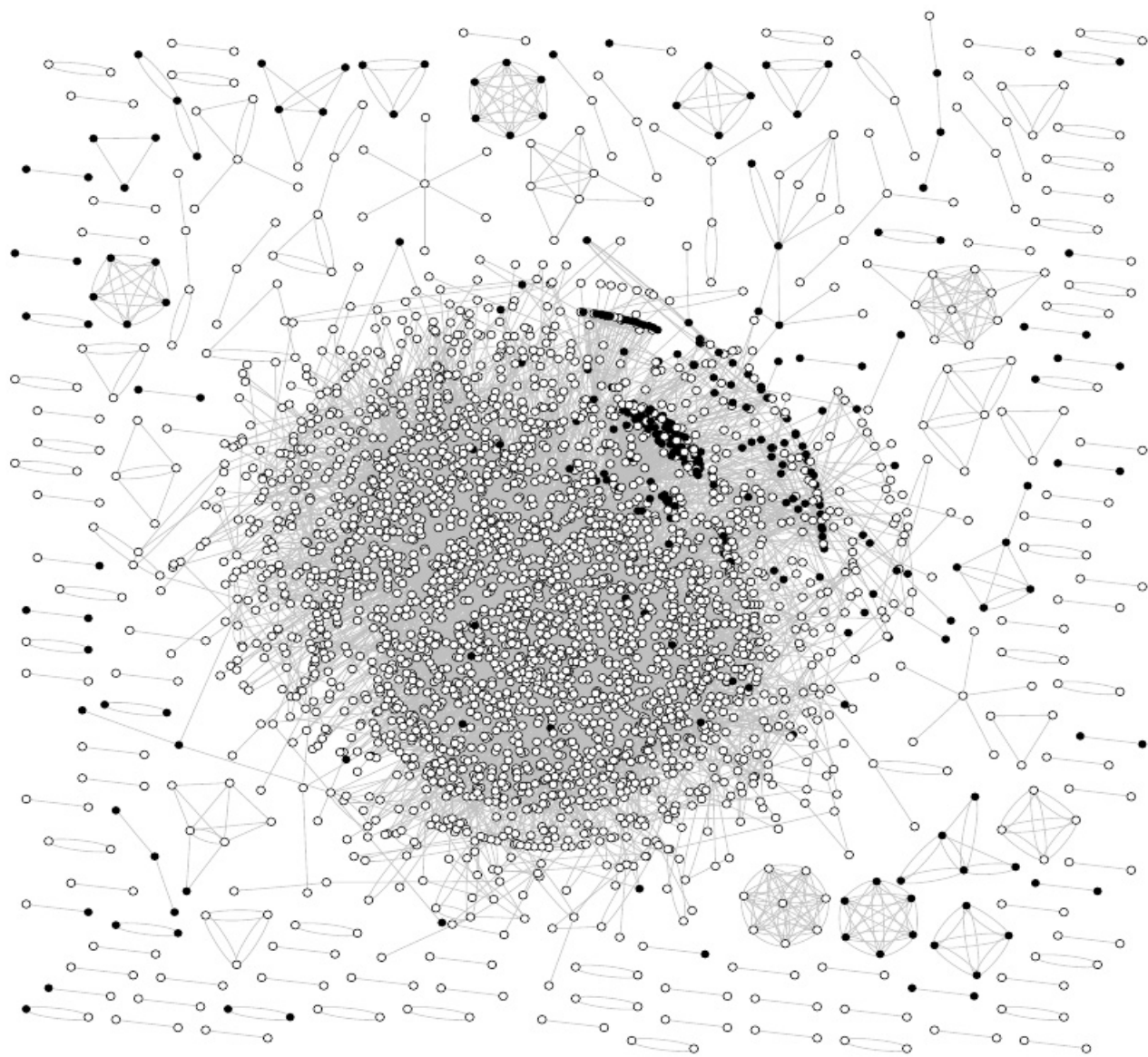
2006

I used *gnuplot* to
visualize an
annotated dataset

Black: spam

They cluster
together!

Paper: <https://doi.org/10.1145/1277741.1277814>

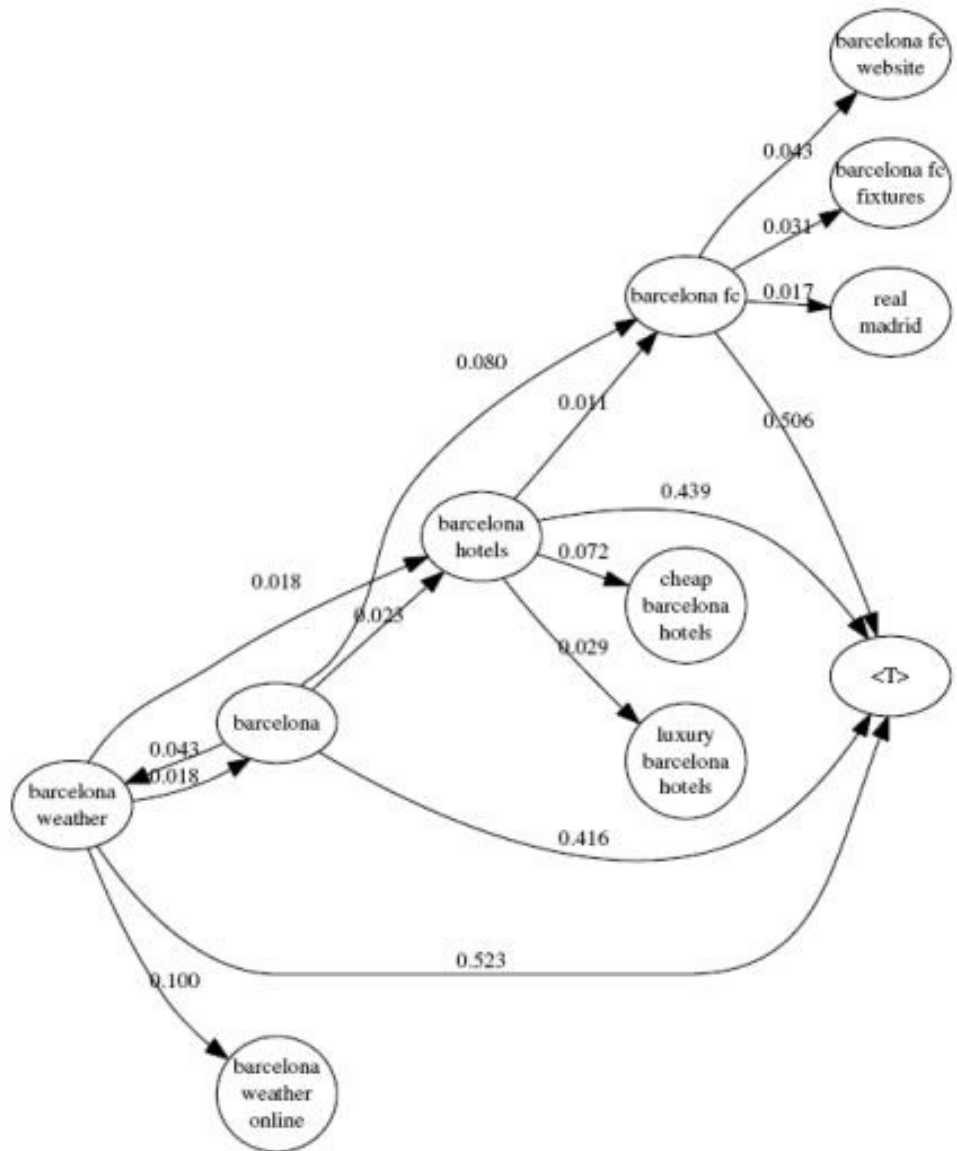


Query flows

2008

We wonder what is the most likely query before or after another query?

How are they connected?
This is how we developed
query flow graphs



Graphs in my own work

- Characterizing national web domains
- Finding web spam pages
- Suggesting queries to searchers
- ...
- Currently:
 - part of a larger toolbox
 - skeptical about structural-only conclusions