Alberto Lumbreras | CV

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Personal information

Date and place of birth: April 4th 1981, Barcelona
Nationality: Spanish

Education

PhD, Computer Science (defense expected in October 2016)	**Feb 2013–2016**
Université de Lyon 2	*Lyon*

Industrial PhD (CIFRE) in Technicolor R&D (Rennes).
Supervisors :
Bertrand Jouve (CNRS, U. Toulouse 2. Previously : U. Lyon 2),
Julien Velcin (Université Lyon 2, ERIC Lab),
Marie Guégan (Technicolor)

Master, Artificial Intelligence	**2009–2012**
Universitat Politècnica de Catalunya	*Barcelona*

(2-year programme. Score : 7,69/10)

BSc, Telecommunication Engineering	**1999–2005**
Universitat Politècnica de Catalunya	*Barcelona*

(5-year programme)

Summer Schools

Network analysis and applications	**August 2014**
http://www.quantware.ups-tlse.fr/ecoleluchon2014/	*Luchon*
Machine Learning Summer School	**May 2014**
http://mlss2014.hiit.fi/	*Reykjavik*
Structure and dynamics of complex networks	**April 2014**
http://leshouches2014.weebly.com/	*Les Houches*
Lisbon Machine Learning School	**July 2011**
http://lxmls.it.pt/2011/Home.html	*Lisbon*

PhD Thesis

title: *Latent Group Dynamics : Evolution of Emergent Roles in Social Networks*

supervisors: Bertrand Jouve (CNRS, U. Toulouse 2. Previously : U. Lyon 2),
Julien Velcin (Université Lyon 2, ERIC Lab), Marie Guégan (Technicolor)

description: The aim of the thesis is to develop new Machine Learning and Social Network Analysis techniques to analyse the global and individual dynamics of online forums, to automatically find the different latent roles of participants and to study whether online social roles can be used as predictors for some aspects of users behaviour.

I explored two main approaches during my thesis. The first one is based on modelling user behaviours as a result of a stochastic generative process. This generative process is assumed creates a set of archetypical behaviours (roles) and assigns each user to some of these behaviours. The task is to infer the model parameters that define the behaviours as well as the role assignment of each user. I proposed a generative model and its corresponding inference method based on Monte Carlo techniques. A paper was submitted the journal of Computational Statistics paper and it has been accepted with minor revisions. This idea also resulted in a patent with an application for recommender systems (listed below).

The second approach consists on a new graph generative model for discussion threads. Graph generative models, such as the Albert-Barabasi model, are used to understand the laws and parameters that explain the evolution of some real work network. Some models have been proposed that explain some properties of discussion threads. In this second approach I propose modelling real-time as a property (e.g. : variations in the speed of posting) since our data suggests that speed at which a thread grows might depend on the structure of the thread. Besides, I propose including roles into the model, so that the parameters (e.g. : as tendency to reply to popular posts) are different for every user role. This model has several advantages. Firstly, it is a more accurate generative model that allows to explain the impact of different roles in the dynamics of online conversations. Secondly, it can be used for post recommendations based on the graph structure and the user roles.

Master's Thesis

title: *Towards Trust-Aware Recommender Systems*

supervisor: Ricard Gavaldà

description: Recommender systems have been strongly researched within the last decade. With the arising and popularization of digital social networks a new field has been opened for social recommendations. We propose a way to infer trust from Twitter interactions and to compute trust between distant users. Our method is based on Markov chains, which makes it simple to be implemented and computationally efficient. We study the properties of this trust metric and study its application in a recommender system of tweets.

Experience

Academic supervision

Master's Thesis co-Supervisor   **2015**
Université de Lyon 2 – Technicolor   *Lyon*
Master in Data Mining and Knowledge Management.
Co-supervised the Master's Thesis of Zara Alaverdyan at Technicolor, entitled "Language-based analysis in online forums" (supervisor : Julien Velcin).

Teaching

(Due to my CIFRE contract I could not teach at the university during my thesis. I have started teaching as soon as my CIFRE contract expired.)

Vacataire   **March-April-May 2016**
Université Paul Sabatier   *Toulouse*
Systèmes d'information et applications Web (TP, 24h)
Web applications with PHP and MySQL.

Vacataire   **March-April-May 2016**
IUT Rangueil   *Toulouse*
UML design with Modelio (TP, 18h)

Teacher   **2000**
Epsilon Formación, http: // www. epsilon-formacion. com/   *Barcelona*
Elaboration and teaching of courses for first years students of Telecommunication Engineering (TD, 40h)

R&D...

Research Assistant   **2010–2012**
Universitat Politècnica de Catalunya   *Barcelona*
  — **Sentiment Analysis and Stream Mining** : Adapted the popular MOA software (stream data mining) to be used with particular sentiment analysis methods in Twitter streams and to show the results in a friendlier interface. I worked in close collaboration with Albert Bifet, main developer of MOA.
  — **Recommender Systems** (Master's Thesis).

R&D Engineer   **2004–2010**
Telefónica R&D   *Barcelona*
Main projects :
  — **Recommender Systems & User Profiling (2009–2010)** : worked in the back-end of a platform to integrate all recommendations and user profiling services in Telefónica.
  — **Movisphere (corporate spin-off) (2008-2009)** : as a part of a two-people team, moved to Vancouver for three months to build a start-up founded by Telefónica in collaboration with the Center for Digital Media. Movisphere was a multi-platform (mobile, TV, PC) service of *casual games*. The project received the following awards :
    — Best New Business Opportunity at Telefónica's Second Annual Research Fair.
       http://thecdm.ca/projects/archives/movisphere
    — Honoree in the Integrated Mobile Project category at the 13th Webby Awards.
       http://tinyurl.com/webbyawards-movisphere
  — **Peer-to-Peer Networks (2006–2007)** : worked on P2P (bluetooth and IPTV) content distribution, prototypes development and analysis of feasibility for integration in Telefónica platform.
  — **Expert Systems (2004–2006)** : implementation of an expert system that monitors and automatically corrects failures in a tier center of a grid network (EGEE - Enabling Grids for E-Science in Europe).

Languages

French: fluent   **Spanish**: Native
English: fluent (TOEFL iBT : 104)   **Catalan**: Native

Publications

  — Books : 1
  — International workshops : 2
  — National conferences : 1
  — Patents : 1
  — Journals : 1

Journals...

Lumbreras A., Velcin J., Guégan M., and Jouve B. Non-parametric clustering over user features and latent behavioral functions with dual-view mixture models. *Computational Statistics*, 2016. (to appear).

Books..

Toret J. (coord), Aguilera M., Aragón P., Calleja A. Lumbreras A., and Marín Ó. *Tecnopolítica y 15M : la potencia de las multitudes conectadas. Un estudio sobre la gestación y explosión del 15M*. Sociedad Red. Universitat Oberta de Catalunya Ed., 2015. Preprint edition : http://tecnopolitica.net/sites/default/files/1878-5799-3-PB%20%282%29.pdf.

Conferences and Workshops (international)

Lumbreras A., Lanagan J., Jouve B., and Velcin J. An insight into the analysis of roles in imdb. In *Complexity in social systems : from data to models*, 2013. `http://complexity-in-social-systems.u-cergy.fr/?page_id=18` (Cergy).

Lumbreras A. and Gavaldà R. Applying trust metrics based on user interactions to recommendation in social networks. In *International Conference on Advances in Social Networks Analysis and Mining - ASONAM*, pages 1191–1196, 2012. [First International Workshop on Social Knowledge Discovery and Utilization (SKDU 2012)] `http://dl.acm.org/citation.cfm?id=2456888`.

Conferences and Workshops (national)

Lumbreras A., Lanagan J., Velcin J., and Jouve B. Analyse des rôles dans les communautés virtuelles : définitions et premières expérimentations sur IMDb. In *Modèles et Analyses Réseau : Approches Mathématiques et Informatiques (MARAMI)*, pages 1–12, 2013. `http://lipn.univ-paris13.fr/marami2013/MARAMI13/Programme_2.html`.

Seminars and Posters

Lumbreras A. Dynamiques dans les forums de discussions online. In *Modélisation des Réseaux en Histoire (MOREHIST)*, 2015. `http://preview.tinyurl.com/morehist` [Workshop, Université Toulouse 2].

Lumbreras A. Methods and systems for clustering-based recommendations. `https://recerca.upc.edu/larca/en/news/seminar-by-alberto-lumbreras`, 2015. [Seminar at LARCA Lab, Universitat Politècnica de Catalunya, Barcelona].

Lumbreras A. Roles and dynamics of online conversations. `https://www.irit.fr/-Seminaires-IRIT-UPS,902-?evtid=238&evttype=seminaire&lang=fr`, 2015. [Seminar at IRIT, Toulouse].

Lumbreras A. Dynamique des discussions dans les forums. `https://iscpif.fr/event/journee-interdisciplinaire-modelisation-des-interactions-temporelles/`, 2016. [Seminar at Institut des Systèmes Complexes de Paris].

Lumbreras A. An introduction to markov chain monte carlo. `https://github.com/alumbreras/MCMC_intro`, 2016. [Seminar at Technicolor, Rennes].

Lumbreras A., Guégan M., Julien J., and Jouve B. Clustering users features and latent behavioral functions. In *StatLearn*, 2015. `http://statlearn.sfds.asso.fr/statlearn15/` [Poster, Grenoble].

Toret J., Aguilera M., Lumbreras A. Aragón P., Linares J., and Marín Ó. Gestation of the 15m, devices and augmented events, network system, emergence and self-organization. evolution of the network system. In *Digital culture, networks and distributed politics in the age of the Internet. From the Global Spring to the Net Democracy. Communication and Civil Society programme of the IN3 in Barcelona, Spain, in October 24-25*, 2012. `http://ictlogy.net/review/?p=3992`, Barcelona.

Publications submitted

Conferences and Workshops (international)

Lumbreras A., Jouve B., Velcin J., and Guégan M. You are the way you structurally talk : Structural-temporal neighborhoods of posts to characterize users in online forums. In *International Conference on Advances in Social Networks Analysis and Mining - ASONAM*, 2016. [submitted].

Patents

Guégan M., Jouve B. Lumbreras A., and Velcin J. Methods and systems for clustering-based recommendations, July 2015. [EU Filled Patent, number 15306168.4].

Conferences and workshops organization

Dynamic Networks workshop   **2016**
(Institut de Systèmes Complexes de Toulouse)   *Toulouse*

`http://isc-t.fr/language/fr/evenements/?event_id1=5`

Hotel and trip reservation for invited speakers ; communications (mailing, website announcements), agenda.

ECML-PKDD   **2010**

http://www.ecmlpkdd2010.org/index1f1e.html   *Barcelona*

Local logistics, reception and assistance for speakers during the conference.

References

References in academy...

— Bertrand Jouve (CNRS, U. Toulouse 2)   jouve@univ-tlse2.fr
— Julien Velcin (U. Lyon 2)   velcin@univ-lyon2.fr
— Marie Guégan (Technicolor)   marie.guegan@technicolor.com
— Ricard Gavaldà (U. Politècnica de Catalunya)   gavalda@cs.upc.edu
— Albert Bifet (Télécom ParisTech)   albert@albertbifet.com

References in industry (Telefónica R&D)...

— Enrique Garcia Illera (Direct Supervisor)   egi@tid.es
— Carlos Domingo (Lab Director)   `https://about.me/carlosdomingo`
— Xavier Amatriain (co-worker, Senior Researcher)   `http://xavier.amatriain.net/`