

# ALBERTO LUMBRERAS

MACHINE LEARNING RESEARCH SCIENTIST

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Taking Machine Learning from maths to production. Applied research for user modeling in areas such as social network analysis, recommender systems or real time bidding. Over 15 years of international experience in both industry and academia.

## EDUCATION

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<b>PhD</b>	Université de Lyon, <b>Machine Learning</b> Dissertation: “Automatic role detection in online forums”	2016
<b>MS</b>	Universitat Politècnica de Catalunya, <b>Artificial Intelligence</b> Thesis: “Towards Trust-Aware Recommender Systems”	2012
<b>BS</b>	Universitat Politècnica de Catalunya, <b>Telecommunication Engineering</b> Project: “Expert system for automatic incidence management in grid nodes”	2005

## EXPERIENCE

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**Staff Research Scientist, Criteo AI Lab** 2019 to current

- Research on deep generative models, transfer and multi-task learning
- Definition of scientific and technical quarterly and yearly goals
- Actively engaged in knowledge transfer from research to production
- Mentorship of junior ML engineers and researchers

**Postdoctoral Researcher, Centre National de la Recherche Scientifique** 2016 to 2018

- Research on Bayesian models for matrix factorization
- Applications on text analysis, recommender systems and social networks
- Co-supervision of a PhD thesis

**Research Engineer (Industrial PhD), Technicolor** 2013 to 2016

- Research on social networks and models for user behaviors in online forums
- Supervision of a Master thesis
- Patent applications

**Research Engineer, Universitat Politècnica de Catalunya**

2010 to 2012

- Research social network analysis, recommender systems and sentiment analysis
- Industrial partnerships to transfer solutions for sentiment analysis on social networks

**Research Engineer, Telefónica Research**

2004 to 2010

- Leadership of small teams
- Proposal and participation in European projects with international partners
- Nominated member of Telefónica's Ambassadors for Innovation, an internal network to boost innovation in the company
- Large set of topics from mobile peer-to-peer to recommender systems

## AWARDS

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**13th Webby Awards (2009). Best New Business Opportunity for the Integrated Mobile.**

<https://www.webbyawards.com/winners/movisphere/>

- My role was to co-lead the team of developers that would create the prototype in Vancouver, in collaboration with the Center of Digital Media, and to elaborate a business plan for a Telefónica spin-off.

## PATENTS

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

## PUBLICATIONS

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- Lumbreras A., Filstroff L., Févotte C.  
**Bayesian Mean-parametrized Nonnegative Binary Matrix Factorization**  
(under review)
- Filstroff L., Lumbreras A., Févotte C.  
**Closed-form Marginal Likelihood in Gamma-Poisson Matrix Factorization**  
*International Conference on Machine Learning (2018)*
- Lumbreras A., Jouve B., Velcin J., Guégan M.  
**Role detection in online forums based on growth models for trees**  
*Social Network Analysis and Mining (2017)*

- Lumbreras A., Guégan M., Velcin J., Jouve B.  
**Non-parametric clustering over user features and latent behavioral functions with dual-view mixture models**  
*Computational Statistics (2016)*
- Lumbreras A., Gavaldà R.  
**Applying trust metrics based on user interactions to recommendation in social networks**  
*IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (2012)*
- Toret J. (coord.), Aguilera M., Aragón P., Calleja A., Lumbreras A., Marín Ó.  
**Tecnopolítica: la potencia de las multitudes conectadas. El sistema red 15M, un nuevo paradigma de la política distribuida**  
*Ed.: Universitat Oberta de Catalunya (2012)*

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## PROFESSIONAL SERVICE

### Symposium Co-Organizer

- *Dynamic Networks workshop*  
Institut d'Etudes des Systèmes Complexes de Toulouse (2016)
- *Advanced mathematics for network analysis*  
Institut d'Etudes des Systèmes Complexes de Toulouse (2016)
- *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*. Barcelona 2010

### Peer-Reviewed Articles for:

- International Conference on Learning Representations (ICLR)
- Neural Information Processing Systems (NeurIPS)
- IEEE Transactions on Signal Processing (TSP)
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- IEEE International Workshop on Machine Learning for Signal Processing (MLSP)

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## SKILLS AND LANGUAGES

**Tools:** R, Rcpp, Python, C++, Java, MATLAB, SQL, NoSQL, Linux.

**Languages:** Spanish and Catalan (native), French and English (professional, C2).