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# Xavier Amatriain (Phd)

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## Summary

Currently VP of Engineering, AI Product Strategy at LinkedIn where I lead cross-organization Generative AI projects across product and Engineering. Prior to that, I co-founded Curai, a startup using the latest AI advances to improve healthcare access for everyone. Previous to that I was the VP of Engineering at Quora, but I am probably best known for having started the ML Algorithms team at Netflix in charge of the famous Netflix recommendations. I have extensive research and management experience of more than 20 years. I have authored more than 100 peer-reviewed publications with over 5k citations, and hold several patents. I am mostly known for my work in Machine Learning and Recommender Systems, but I have also done research on areas such as augmented reality, audio and music, signal processing, and most recently NLP, and AI for healthcare. I am frequently invited to talk and lecture on the topic. As a university professor, I have lectured on topics ranging from Software Engineering to Machine Learning and Information Retrieval.

My current position at LinkedIn is at the cross-roads of deep AI technical innovation and product. I am also an advisor to several startups and larger companies on these topics.

## Main areas of expertise

Generative AI, machine learning and artificial intelligence, software engineering, data science, recommender systems, product design, information retrieval, social networks, user modeling, data mining, personalization, multimedia systems

## WORK EXPERIENCE

### [LinkedIn](#), [Sunnyvale, CA](#) – *VP of Engineering, AI Product Strategy*

2022 Current

Leading company wide cross-organizational projects in Generative AI.

Some highlights:

- **Initiated GenAI Initiatives:** Spearheaded the launch of GenAI initiatives at LinkedIn, fostering cross-functional collaborations and setting a robust foundation for future projects.
- **Led initial exploratory GenAI product project:** Guided a 10-week tiger team in demonstrating GenAI's potential, culminating in impactful presentations to both LinkedIn and MSFT CEOs and shaping the LinkedIn GenAI product strategy that led to many product feature releases such as the new [AI-first Premium experience](#).

- **GenAI Technical Strategy:** Formulated and led the GenAI technical strategy, evolving into the InGen Initiative for comprehensive AI-first engineering development.
- **GenAI Platform Team Leadership:** Directed a cross-organizational team to develop GenAI solutions, influencing product features and earning recognition in MSFT's Earnings Call.
- **Knowledge Sharing:** Drove internal and external Generative AI educational efforts, including LinkedIn's most successful Hackathon in the history of the company, or a LinkedIn course with over 85k students at this point, engaging learning sessions, and widely-viewed publications (see [blog](#)).

## Curai Health, Palo Alto, CA – *Cofounder/CTO*

2017 2022 (Currently member of the Board of Directors)

I led the whole technical organization including engineering, AI and clinical research, and privacy and security. I was also directly involved in areas such as Product and Business Development, and general company leadership.

Some of the highlights of my time at Curai:

- Hired many new people into the team, including former employees of Facebook, Netflix, Google, Quora, Microsoft, and others.
- Defined overall technical approach to an AI-centered product that has both patients and doctors as users
- Contributed actively to all our research and publications
- Led the definition of our culture, as well as many processes such as hiring, privacy and security (including HIPAA and SOC-2 compliance) or IT Management.
- Besides leading our technical organization, at different times I stretched to also leading product development, or HR.
- Led several executive hiring processes as well as the organization of our world-class medical advisory board.
- Presented Curai externally at many events such as the AI for COVID-19 conference organized at Stanford
- Contributed actively to our different fund-raising efforts (over \$60M so far), and served in the board of directors interfacing directly with our investors.

## **Various** – *Advisor*

2017 PRESENT

For the past few years I have been a part-time advisor to several organizations in the AI/Machine Learning space. This includes all the way from large organizations such as LIDL, the largest European retailer, or Manning Publications, to early-stage and successful startups like Vivino. More details upon request.

## Quora, Mountain View, CA – *VP of Engineering*

2015 2017

I led the Engineering organization reporting directly to the CEO. I was responsible for overall technical decisions on all engineering areas. I managed an organization of around 100 engineers, including 12 managers. Some of the highlights of my time leading the team:

- Hired many new managers into the team

- Contributed directly to the design of new Machine Learning algorithmic approaches
- Led the re-definition of many of our innovation and engineering processes
- Represented the company external at many technical events
- Contributed to many company-wide initiatives such as the definition of our cultural values.

## **Netflix, Los Gatos, CA** – *Research/Engineering Director*

2011 2015

I led the Algorithms Engineering team (formerly known as Personalization Science and Engineering), in charge of the world famous recommendation algorithms at Netflix. I supervised projects and was the technical lead providing technical advice to other teams and internal partners on projects related to machine learning, personalization, and search. I organized cross-team activities such as internal and external seminars, and all-hands discussions on algorithms. Some of the highlights of my time leading the team:

- I hired many new people into the team (grew the team from 3 to over 50).
- The team improved several of the algorithms in Netflix recommendation, personalization, and search showing measurable gains for the business. Those improvements were cited in several quarterly investor letters.
- We defined a process to measure improvements that included a complete data pipeline, machine learned models, and offline metrics that were correlated with online AB tests results.
- We improved the general infrastructure by moving systems to the Cloud (AWS), integrating them with Spark and Hadoop.
- We improved the monitoring and real-time alerting on the algorithms running in production.
- I wrote several posts on the Netflix blogpost to explain our advances in recommendation technologies
- I was one of the 4 people selected to give a talk in the first Netflix Engineering Open House
- I gave several external talks representing Netflix in different forums such as KDD, Recsys, Google, Facebook, or Twitter
- I started a popular internal Research Seminar series to discuss advanced topics related to Machine Learning and Personalization

## **Telefonica, Barcelona, Spain** – *Senior Research Scientist*

2007 2011

- Telefonica is one of the largest telecommunications companies in the World. As a Research Scientist in Telefonica Research I led the area of Web Science with a specific focus on Social Networks and Recommender Systems. During this time I led postdoc researchers and interns from around the world. My main goal as a researcher was to obtain top-tier publications in the field (see Publication list below) and generate internal IP in the form of patents and tech transfer. I also acted as a high-profile consultant to development teams dealing with projects in those same areas.
- During this time I also organized the ACM Recommender Systems conference in Barcelona (2010)

## **University of California Santa Barbara, Santa Barbara, CA** – *Research Director, Lecturer*

2005 2007

- Direct responsibility over research coordination, planning and facility management for this research center that includes 3 different labs/studios and around 20 different researchers <http://www.create.ucsb.edu>. During this period I was also Associate Director for the Media Arts and Technology Initiatives and I led the Allosphere Project. Under direct supervision of the Director, responsible for industry relation, grant writing, facility coordination and PR for a \$40 million multimedia research center to be hosted in the California Nanosystems Institute. Direct supervision of technical issues related to one of the largest immersive environments in the world, an spherical building called the Allosphere <http://www.allosphere.ucsb.edu>.
- See Teaching section for details on teaching activities during this period

## **Universitat Pompeu Fabra, Barcelona Spain – Researcher, Professor**

1995 2005

- I was responsible for teams of up to 8 researchers in funded research projects. Project manager and lead designer of the CLAM framework (<http://clam-project.org>), which won the 2006 ACM Open Source Multimedia competition and was featured in the 2008 and 2009 Google Summer of Code program.
- See Teaching section for details on teaching activities during this period

## **EDUCATION**

### **Universitat Pompeu Fabra, Barcelona, Spain– PhD Computer Science**

2000 2005

Under the supervision of Dr. Xavier Serra I read my dissertation entitled “An Object-Oriented Metamodel for Digital Signal Processing with a focus on Audio and Music” in January 2005, receiving the highest degree (Cum Laude). I was the first ever PhD student to come out from the Technology Department of the Universitat Pompeu Fabra, a new university in Spain that is already ranked among the top 3 in the country.

### **Universitat Politecnica de Catalunya, Barcelona, Spain– Telecommunications Engineering**

1992 1999

## **SELECTED PUBLICATIONS**

### In the Press:

- [Top 10 Most Innovative CTOs to Watch in 2022](#) – Entrepreneur. 2022
- [Khosla-Backed Health AI Startup Raises \\$27.5 Million To Supercharge Primary Care](#) – Forbes. 2020
- [The People Trying to Make Internet Recommendations Less Toxic](#) – Wired. 2019
- [Xavier Amatriain: "La inteligencia no es lo que nos define como humanos"](#) (Spanish) – El Periodico. 2019

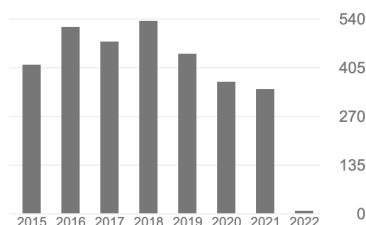
- [Curai picks up \\$10.7M to create a smarter system to help patients supply the best info for their doctors](#) - TechCrunch. 2018
- [El español que te enganchó a Netflix quiere ahora que un robot sea tu próximo médico](#) (Spanish) - El Confidencial. 2018
- [La plataforma de preguntas y respuestas Quora se estrena en castellano](#) (Spanish) - El Periodico. 2016
- [Netflix moves into deep learning research to improve personalization](#) - Venturebeat. 2014
- [The Science Behind the Netflix Algorithms That Decide What You'll Watch Next](#) - Wired. 2013
- [Remember Netflix's \\$1m algorithm contest? Well, here's why it didn't use the winning entry](#) - The Next Web. 2012

### Blog posts

- [Transformer Models: an introduction and catalog](#) -2022
- [On the usefulness of the Netflix Prize](#) - 2021
- [Scaling healthcare through AI](#) - 2020
- [The 7+1 habits of highly successful leaders](#) - 2020
- [AI for COVID-19](#) - 2020
- [Making decisions in organizations](#) - 2019
- [Cultural over/under-fitting and transfer learning. Or why the "Netflix Culture" won't work in your company](#) - 2019
- [Data as Prior/Innate knowledge for Deep Learning models](#) -2019
- [Netflix recommendations beyond the 5 stars](#) - 2012

### Peer reviewed publications (see [Google Scholar](#))

	All	Since 2017
Citations	5178	2174
h-index	30	20
i10-index	60	32



- **MEDCOD: A Medically-Accurate, Emotive, Diverse, and Controllable Dialog System.** Rhys Compton, Ilya Valmianski, Li Deng, Costa Huang, Namit Katariya, Xavier Amatriain, Anitha Kannan. In Machine Learning for Health. 2021
- **Medically Aware GPT-3 as a Data Generator for Medical Dialogue Summarization** Bharath Chintagunta, Namit Katariya, Xavier Amatriain, Anitha Kannan. In Proceedings of the Second Workshop on Natural Language Processing for Medical Conversations. 2021
- **Effective Transfer Learning for Identifying Similar Questions: Matching User Questions to COVID-19 FAQs.** McCreery, C. Katariya, N. Kannan, A. Chablani, M. Amatriain, X. Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining. 2020

- ***Few-shot learning for dermatological disease diagnosis.*** Prabhu, V. Kannan, A. Ravuri, M. Chavani, M. Sontag, D. Amatriain, X. Proceedings of the Machine Learning for Healthcare Conference. 2019
- ***Learning from the experts: From expert systems to machine learned diagnosis models.*** Ravuri, M. Kannan, A. Tso, G. Amatriain, X. Proceedings of the Machine Learning for Healthcare Conference. 2018
- ***Lessons learned from building real-life recommender systems.*** Amatriain, X. Agarwal, D. Proceedings of the 10th ACM Conference on Recommender Systems. 2016
- ***Recommender systems in industry: A netflix case study.*** Amatriain, X., Basilico, J. In Recommender systems handbook 2015
- ***Mining large streams of user data for personalized recommendations.*** Amatriain, X. ACM SIGKDD Explorations Newsletter. 14[2]. 2013
- ***Data Mining Methods for Recommender Systems.*** Amatriain, X. Pujol, J.M. Jaimes, A. Oliver, N. [2011] In Handbook of Recommender Systems. Springer. 2011
- ***Walk the Talk. Analyzing the relation between implicit and explicit feedback for preference elicitation.*** D. Parra, X. Amatriain in the 2011 UMAP Conference. Girona. Spain.
- ***Frameworks generate domain-specific languages: a case study in the multimedia domain.*** Amatriain, X., Arumi, P. IEEE Transactions on Software Engineering. 31 [4]. 2011
- ***Multiverse Recommendation: N-dimensional Tensor Factorization for Context-aware Collaborative Filtering.*** A. Karatzoglou, X. Amatriain, L. Baltrunas, N. Oliver in the 2010 ACM Recsys Conference. Barcelona, Spain
- ***Hybrid Methods for Recommending Connections in Online Social Networks.*** R. Garcia, X. Amatriain in the Workshop on Recommender Systems and the Social Web in the 2010 ACM Recsys Conference. Barcelona, Spain
- ***Temporal Diversity in Recommender Systems.*** N. Lathia, S. Hailes, L. Capra, and X. Amatriain in the 2010 ACM SIGIR Conference. Geneva, Switzerland
- ***Towards Fully Distributed and Privacy-preserving Recommendations via Expert Collaborative Filtering and RESTful Linked Data.*** J. Ahn, X. Amatriain in ACM/IEE Conference on Web Intelligence. 2010
- ***Off the beaten track a mobile field study exploring the long tail of mobile tourist recommendations.*** N. Tintarev, A. Flores, X. Amatriain in the 2010 Mobile HCI Conference. Porto, Portugal
- ***The Wisdom of the Few. A Collaborative Filtering Approach Based on Expert Opinions from the Web.*** Amatriain, X. Lathia, N., Kwak, H. Oliver, N. SIGIR'09
- ***I like it... I like it not: Measuring User Ratings Noise in Recommender Systems.*** Amatriain, X. Pujol, J.M., Oliver, N. UMAP 09 (User Modeling, Adaptation, and Personalization).
- ***Rate it Again: Increasing Recommendation Accuracy by User reRating.*** Amatriain, X. Pujol, J.M. Tintarev, N. Oliver, N. 2009 ACM RecSys Conference.
- ***Towards Time-Dependant Recommendation based on Implicit Feedback.*** Amatriain, X. Baltrunas, L. Context-aware Recommender Systems Workshop in 2009 ACM RecSys Conference.
- ***The Allosphere: An Immersive Multimedia Instrument for Scientific Data Discovery and Artistic Exploration*** Amatriain X., Kuchera-Morin J. , Hollerer T. , Pope S.T. in IEEE Multimedia, 16 (2). April, 2009
- ***Watching TV over an IP Network*** M. Cha, P. Rodriguez, J. Crowfort, S. Moon, X. Amatriain in 8th ACM SIGCOMM conference on Internet measurement
- ***Spectral processing*** Xavier Amatriain, Jordi Bonada, Alex Loscos, Xavier Serra in Zölzer U, editor. DAFX-Digital Audio Effects. Chichester: John Wiley & Sons; 2002

- **Towards instrument segmentation for music content description a critical review of instrument classification techniques** Herrera Boyer, Xavier Amatriain, Eloi Batlle, Xavier Serra in Proceedings of the 1st International Symposium on Music Information Retrieval

## Links

- Webpage: <http://xavier.amatriain.net>
- Twitter: [@xamat](#)
- Blog: <https://amatriain.net/blog>
- LinkedIn: [xamatriain](#)
- [Quora](#)
- [Scholar](#)
- [Slideshare](#)

## TEACHING AND LECTURING EXPERIENCE

### **Stanford University, Palo Alto, CA** – *Computer Science, MBA Guest Lecturer*

2015 Now

- Guest lecturer on several courses, both in Computer Science and Business schools. Lectured on Recommender Systems, and Machine Learning for Healthcare.

### **UC Berkeley, Berkeley, CA** – *Fullstack Deep Learning Bootcamp Guest Lecturer*

2018 2019

- Guest lecture at the Fullstack Deep Learning Bootcamp: Lessons learned from building practical deep learning systems (video available at <https://www.youtube.com/watch?v=5yg08FxB8c>)

### **Frei Universitat of Bozen/Bolzano, Bolzano, Italy** – *International Summer School on Recommender Systems Guest Lecturer*

2017

- 4 hour long guest lecture on Recommender Systems in Industry (slides available at <https://pro.unibz.it/projects/schoolrecsys17/RecsysSummerSchool-XavierAmatriain.pdf>)

### **Machine Learning Summer School, Carnegie Mellon University, Pittsburgh, PA** – *Guest Lecturer*

2014

- Presented a 4 hour long lecture introducing Recommender Systems to machine learning graduate students. Video available at <https://youtu.be/bLhq63ygoU8> )

### **ACM SIG KDD Conference, NY, NY** – *Tutorial*

2014

- Presented a 4 hour long tutorial entitled The Recommender System

Revisited

**Machine Learning Summer School, Santa Cruz, CA** – *Guest Lecturer*

2012

- Presented a 4 hour long lecture on practical approaches to Recommender Systems

**EADA Business School, Barcelona, Spain** – *International MBA Associate Professor, Technology*

2010 2011

- Associate professor teaching Information Systems and Technology to prospective managers and business leaders enrolled in full or part-time MBAs in one of the world's top 100 Business Schools. The courses consisted in solving practical cases in which students had to make business decisions with a strong technological component and background.

**Universitat Pompeu Fabra, Barcelona, Spain** – *Technology Department Associate and Adjunct Professor*

2007 2010 and 1995 2005

- Associate professor and main coordinator of the undergraduate courses on Software Engineering and Information Retrieval. During this time I also directed several student Undergrad, Master and PhD Thesis

**UCSB, Santa Barbara, CA** – *Media Art and Technology Department Lecturer*

2005 2007

- Lecturer in the MAT Master Program. Teaching graduate courses on: Multimedia Engineering, Introduction to Programming, and Algorithmic Composition. Also directed 2 Master Thesis.

**Hobbies**

- Runner, ultra-marathoner, and Ironman
- Amateur musician with two published LPs (back in the days)
- Reading and writing