



IBERAMIA'2024

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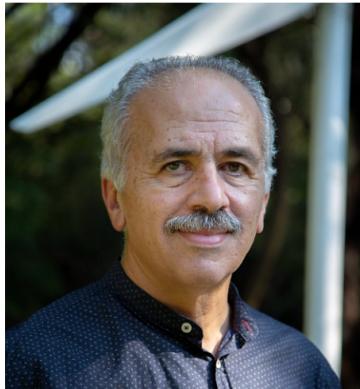
Menú principal



Plenary Talks

From Bayesian to Causal Networks: Graphical Models in Artificial Intelligence

Iberamia 2024 Career Recognition Award talk



Pr. Luis Enrique Sucar

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Probabilistic Graphical Models are a set of powerful techniques to represent and reason under uncertainty in artificial intelligence. After presenting an overview of graphical models, I will focus on Bayesian networks and causal models. Bayesian networks provide a compact representation of a joint probability distribution, including efficient methods for probabilistic reasoning and learning. We will cover some inference and learning algorithms, and illustrate their applications in medicine and industry. However, Bayesian networks are limited to represent associations, to go further and reason about interventions and counterfactuals we require causal models. I will give an introduction to causal graphical models and how to predict the effects on interventions and imagine alternative scenarios. We will cover causal discovery, that is learning cause-effect relations from data, and some applications in medicine and robotics. Finally, we will see how to combine reinforcement learning with causal discovery, to learn at the same time an optimal policy and a causal model.

Short Bio: L. Enrique Sucar (Senior Member IEEE) has a Ph.D. in Computing from Imperial College, London, 1992; a M.Sc. in Electrical Engineering from Stanford University, USA, 1982; and a B.Sc. in Electronics and Communications Engineering from ITESM, Mexico, 1980. He has been a researcher at the Electrical Research Institute, a professor at ITESM, and is currently Senior Research Scientist at the National Institute for Astrophysics, Optics and Electronics, Puebla, Mexico. He has been an invited professor at the University of British Columbia, Canada; Imperial College, London; INRIA, France; and CREATE-NET, Italy. He has more than 400 publications and has directed nearly 100 Ph.D. and M.Sc. thesis. Dr. Sucar received the National Science Prize from the Mexican President; is Member Emeritus of the National Research System, and member of the Mexican Science Academy. He is associate editor of the Pattern Recognition, Computational Intelligence and Frontiers in Rehabilitation journals, and has served as president of the Mexican AI Society and the Mexican Academy of Computing. His main research interest are in probabilistic graphical models, causal reasoning and their applications in robotics, computer vision and biomedicine.

Assessing social bias in AI: Who decides how language models discriminate?



Pr. Luciana Benotti

Associate Professor

[Universidad Nacional de Córdoba – Argentina](#)

Researcher

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In the landscape of Artificial Intelligence (AI), the issue of social bias embedded within language models has garnered significant attention. In this talk, we will first discuss how language models represent context in order to understand how social biases get into these systems. We will delve into different definitions of context and how they affect grounding, intention, hallucinations, and prompting. With this background, we will discuss insights into the intricate dynamics of bias assessment in AI systems. With a human rights perspective, we will explore a fundamental question: Who holds the power to determine how language models discriminate? Through the proposal of an interdisciplinary and participatory approach, we will imagine a future in which power is distributed differently in language models.

Short Bio: Luciana Benotti received a PhD in Computing from the Université de Lorraine in France for her work on Natural Language Processing (NLP) at the Institut National de Recherche en Informatique et en Automatique (INRIA). She also has an Erasmus Mundus joint Masters degree in Computational Logics from the University of Bolzano in Italy and the Universidad Politécnica de Madrid, and a Masters in Computer Science from the Universidad del Comahue in Argentina. She served as the chair of the executive board of the Association for Computational Linguistics until January 2024 and is currently a member of the board. He has been an invited professor at the University of Stanford, US; Imperial College, London; INRIA, France; and CIMEC, Italy. She is currently an Associate Professor in Computer Science at the Universidad Nacional de Córdoba and a researcher at the National Research Council in Argentina. She works with the NGOs Fundación Vía Libreto investigate NLP technology from a human rights perspective. Her research focuses on the areas of conversational agents, natural language processing, error and bias analysis in language models, and the social impact of artificial intelligence.

A look into the video generation frontier: continuous and discrete approaches

Dr. José Lezama

Senior Research Scientist

[Google Deepmind](#)



Short Bio: Dr. José Lezama is a Senior Research Scientist at Google Deepmind. Before 2021 he was an Assistant Professor at Universidad de la República in Uruguay. He holds an MSc and PhD in applied mathematics from École Normale Supérieure Paris-Saclay and was a postdoctoral researcher at Duke University. His research interests include learning visual representations via geometric and probabilistic modeling, generative models and machine intelligence in general. His engagement with the international research community has been acknowledged by multiple publications in top venues such as CVPR, ECCV, ICLR, ICML and outstanding reviewer recognitions at CVPR, ECCV, NeurIPS and ICLR.

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