ANNUAL REPORT

2021

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ALICANTE unit

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European Laboratory for Learning and Intelligent Systems

Annual
Report

2021

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ALICANTE unit

Contents

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Artificial Intelligence

Made in Alicante, Spain, Europe

Social Good
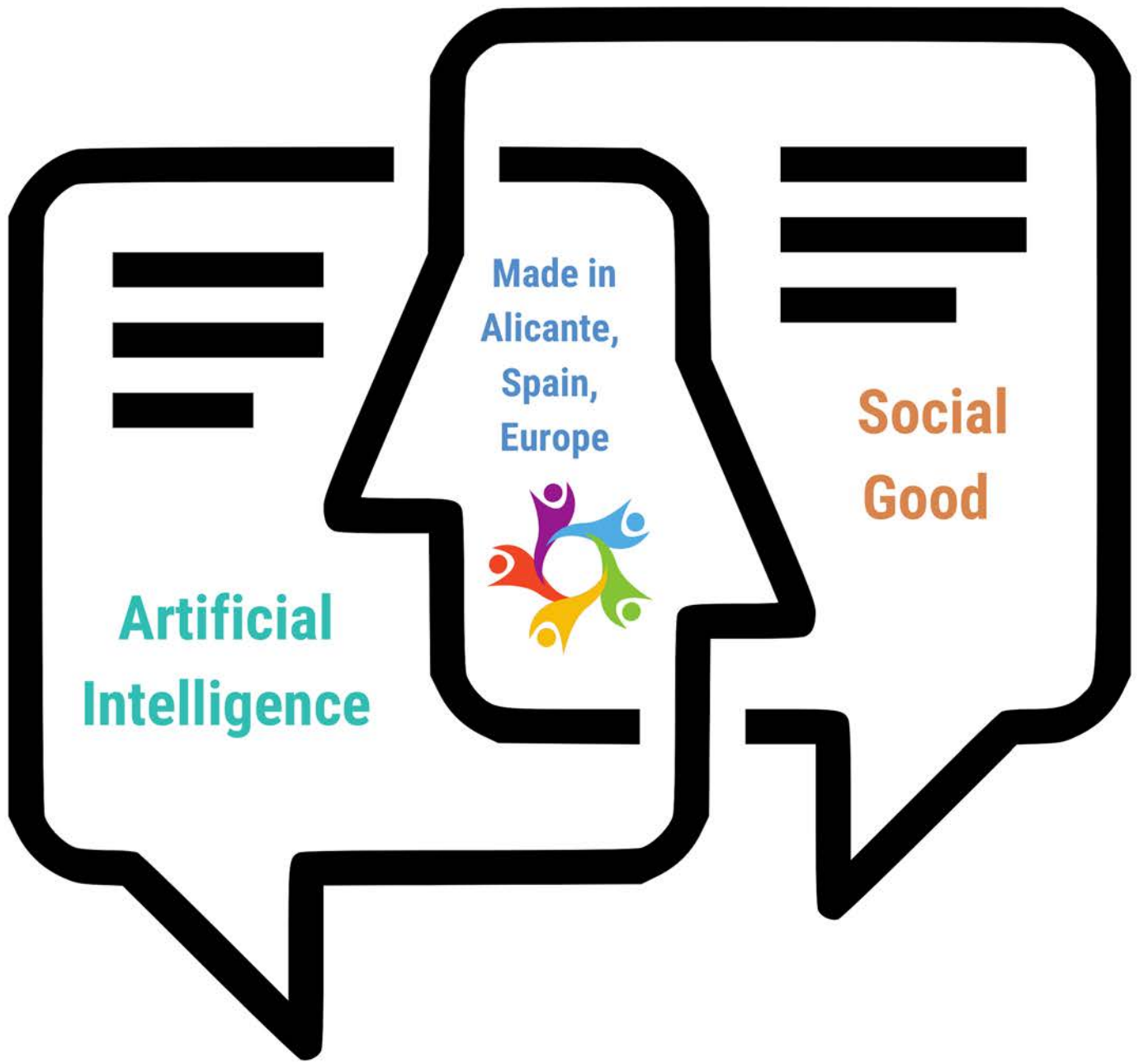
1.INTRODUCTION

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2021

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Welcome letter by the President of the Board

Christof Beaupoil
President of the Board of ELLIS Alicante

Dear friends:

We present you the 2021 Annual Report of the ELLIS Unit Alicante Foundation. In it you will find information about our work during our first year of life, in which we have made important achievements despite the terrible SARS-CoV-2 pandemic.

During the first ten months of 2021, our focus has been on contributing to the fight against the coronavirus pandemic through data analysis and Artificial Intelligence. The work done has achieved not only scientific impact through first level publications and more than fifty conference lectures and webinars, but also societal impact, reflected in more than a hundred appearances in national and international media, as well as in the collaboration with the Generalitat Valenciana through the Data Science against COVID-19 taskforce. We are proud of the work done, which has received prestigious worldwide awards. Among others, the XPRIZE Pandemic Response Challenge and Best Scientific Paper Award at ECML-PKDD 2021.

In October 2021 we were finally able to inaugurate our headquarters in the Science Park of the University of Alicante and welcome the first employees of the Foundation, including three PhD students of the prestigious ELLIS PhD program.

Finally, we would like to express our sincere thanks to all the people and organizations that support our work, becoming a driving force and source of hope to achieve top level research in Artificial Intelligence focused on people in our country. We hope to continue counting on your support.

Introduction

The ELLIS Unit Alicante Foundation (hereafter ELLIS Alicante) is a private non-profit foundation that is creating a world-class research team focused on investigating the ethical implications of Artificial Intelligence (AI) and the relationship between people and intelligent systems. Our name, The Institute of Humanity-centric AI (IAHCAI), defines what and how we want to play our role in 21st century society. We firmly believe in the power of technology as a generator of progress and universal well-being.
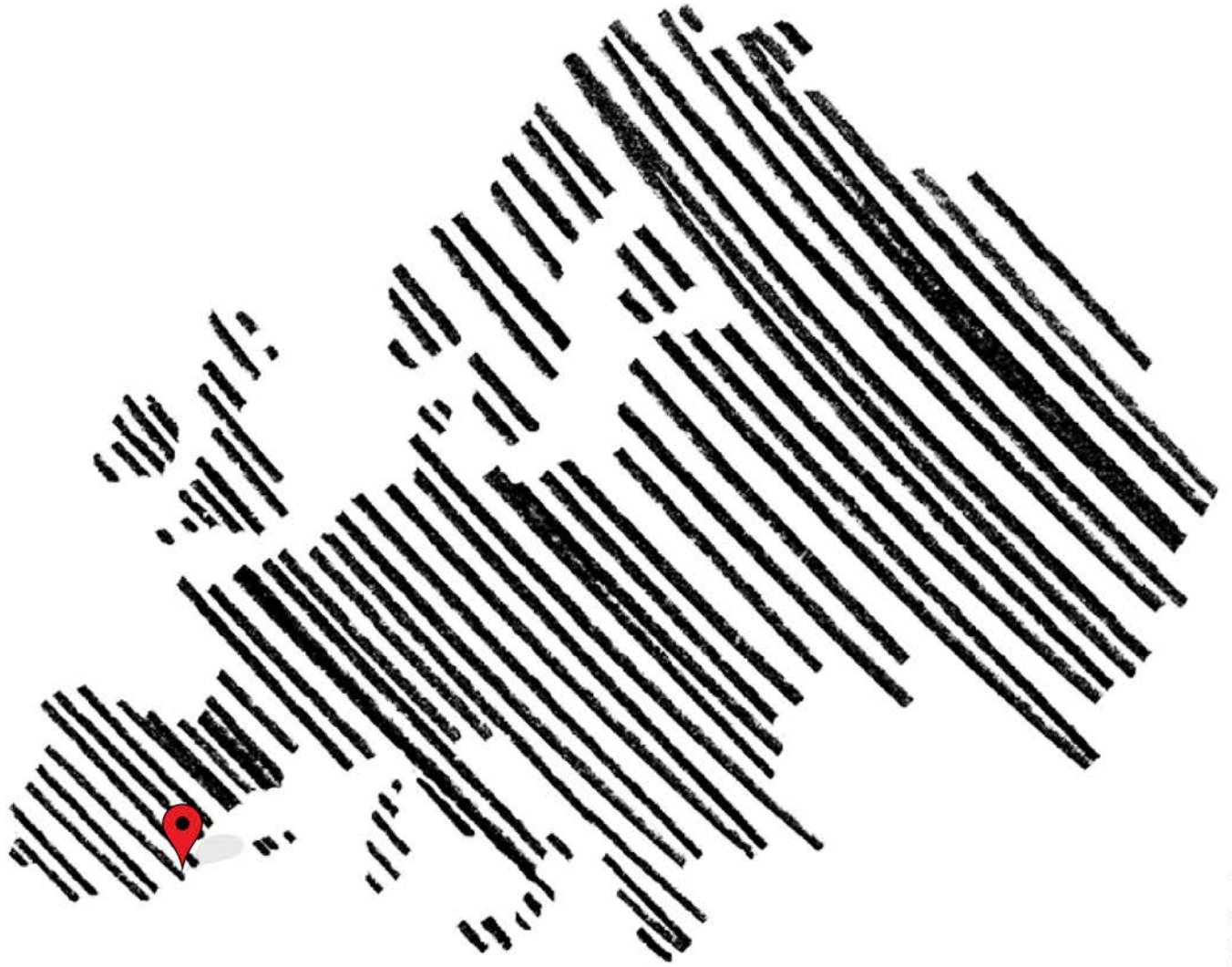
Nuria Oliver
Director of ELLIS Alicante

ELLIS Alicante is part of ELLIS (European Laboratory for Learning and Intelligent Systems), the European network of research excellence. It is the only unit created from scratch, in the spirit of a scientific startup.
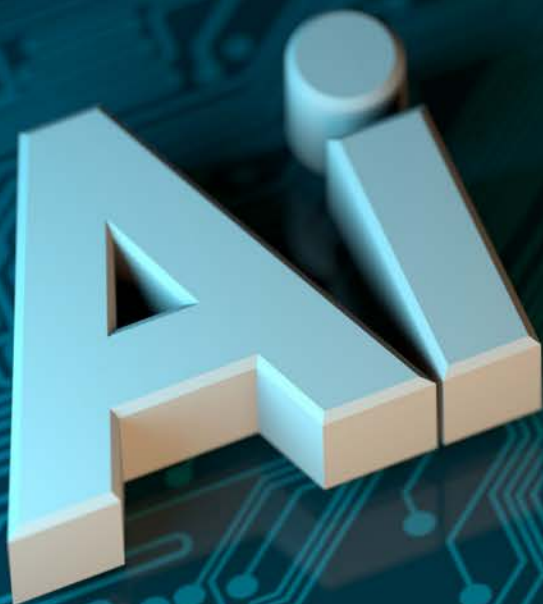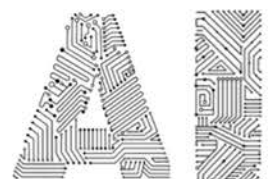
2. ABOUT ELLIS ALICANTE

Purpose

VISION

The ELLIS vision, to which ELLIS Alicante adheres, entails undertaking free and open research of excellence within Europe to influence the way modern AI is changing the world. ELLIS aims to establish an open and cooperative system that allows basic research to achieve practical application, with positive economic and social impact.

An AI Revolution for and by the people

MISSION

The ELLIS vision entails undertaking free and open research excellence for Europe to influence the way modern AI is changing the world. ELLIS aims to establish an open and cooperative system that enables basic research to achieve practical application, with positive economic and social impact.

ELLIS has the mission to become the leading employer and generator of excellent research talent in Machine Learning-based AI. This mission leverages the vast experience of universities, through a European PhD program that is attractive and able to recruit the best graduates to continue to drive our vision for generations to come.

We aim to be the research center of reference in Europe on AI for and by the people. We are the only ELLIS unit devoted exclusively to this topic.

ELLIS Alicante will focus on generating research employment and attracting research talent to its area of influence: Alicante, Valencia, Spain, Europe.

6

Values

 # 1   We strive for excellence and pursue our mission with passion.

 # 2   We embrace calculated risks and new approaches. We have an entrepreneurial spirit that welcomes innovation, diversity of ideas and innovative thinking.

 # 3   We are truthful, fair and trustworthy in all aspects of our work. We hold ourselves and our partners to the highest ethical standards. We expect others to do the same.

 # 4   We understand that our ultimate success depends on that of our partners and funding agencies. Our humility will be key to building legitimate and trusting relationships.

 # 5   We value each of our team members as individuals, but we believe that we achieve the best results by working together and being team players.

 # 6   We encourage the enjoyment of work as a key element to foster creativity and motivation.

Goals 2021

1
GOAL

Conduct scientific research of excellence in Artificial Intelligence with positive social impact, especially in the context of the fight against the COVID-19 pandemic.

2
GOAL

The Foundation aims to contribute to research excellence in Europe to enable it to be a globally prominent player in Artificial Intelligence, as an engine of change in the world. To achieve this, it will need to offer globally competitive salaries for research staff, flexibility to collaborate with companies, create start-ups and3 collaborate with other research centers of excellence, in projects, staff exchange and other collaborative activities.

3
GOAL

To contribute to generate a positive economic and social impact in the preferred territorial area, attracting, retaining and training excellent research talent and conducting research that complements specific industry interests.

Beneficiaries of our Activity

In ELLIS Alicante we firmly believe in the power of technology as a generator of progress and universal welfare. The actions of the foundation must benefit society in its broadest sense.

Research

Progress

Social Good

Governance

BOARD OF TRUSTEES

Responsible for the governance and representation of the Foundation, the fulfillment of its objectives and the administration and management of its assets.

SCIENTIFIC ADVISORY BOARD

Composed of scientists of international prestige in the research areas of ELLIS Alicante. Its function is to support the research agenda of ELLIS Alicante and to provide its expert opinion. It usually meets once a year.

ELLIS EUROPE

ELLIS Alicante is one of the 34 units of ELLIS Europe and, as such, it is part of a network of research excellence composed of those at the forefront of the European scientific and research community in Artificial Intelligence, working in an international collaborative environment, with the aim of making Europe a pioneering region in AI research.

ORGANIZATION CHART

BOARD OF TRUSTEES*
President
Christof Beaupoil

SCIENTIFIC ADVISORY BOARD

DIRECTOR
Nuria Oliver

ELLIS EUROPE

RESEARCH SUPPORT

RESEARCH

SPONSORS & PARTNERSHIPS

AI that understands us
Human Behavior Modelling

AI that interacts with us
Intelligent, Interactive Systems

The Honorary President position is designated by the Generalitat Valenciana

AI that we trust
Ethical Challenges and Impact of Artificial Intelligence

3.

ABOUT ELLIS EUROPE

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ELLIS Europe

Alicante	Amsterdam	Berlin	Cambridge
Copenhagen	Darmstadt	Delft	Edinburgh
Lausanne (EPFL)	Zürich (ETH)	Freiburg	Genoa
Haifa (Technion)	Heidelberg	Helsinki	Jena
Vienna (IST Austria)	Leuven	Linz	Lisbon
London (UCL)	Manchester	Milan	Modena (Unimore)
Munich	Nijmegen	Oxford	Paris
Prague	Saarbrücken	Stuttgart	Tel Aviv
Tübingen	Turin		

34 ELLIS Units in Europe and Israel

www.ellis.eu

34
ELLIS Units

14
European countries
and Israel

14
Research programs

320
Million euro budget
for the ELLIS units in
the next 5 years

12
Million euro in
European funding via
the ELISE project

e l l i s
European Laboratory for Learning and Intelligent Systems

ELLIS (The European Laboratory for Learning and Intelligent Systems) is an initiative of the European scientific community with a committed focus on scientific excellence, innovation and the positive societal impact of Artificial Intelligence. Formally it is a non-profit association, based in Germany.

ELLIS' mission is to contribute to European technological sovereignty in Artificial Intelligence and to make Europe competitive in this strategic discipline vis-à-vis North America and Asia. To this end, ELLIS' priority is to invest in excellent research talent, creating an environment that is sufficiently attractive to attract, retain, inspire and educate the next generation of excellent researchers in modern AI.

The ELLIS strategy is also aimed at accelerating Europe's position in AI when compared to its natural competitors on a global scale, and therefore rests on four pillars necessary to reinforce technological excellence and sovereignty in a research field of such competitive value in the short, medium and, especially, long term.

ELLIS Units are excellent research groups that commit to be ambassadors of ELLIS and to fulfill the vision, mission and conditions defined by ELLIS. After four competitive selection processes, ELLIS has selected 34 ELLIS Units in 14 European countries and Israel.

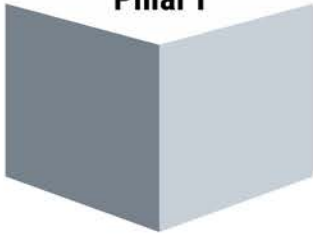These ELLIS units include some of the best research groups in modern Artificial Intelligence, not only at European level, but worldwide, such as the universities of Oxford and Cambridge, ETH Zurich, EPFL, several Max Planck institutes or the Technion in Israel.
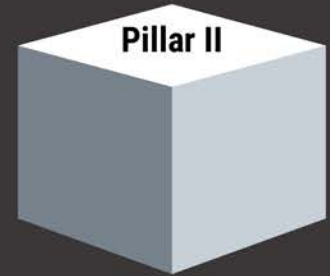
www.ellis.eu/units

ELLIS strategy

Pillar I

Attract, inspire, educate and connect

Europe's best doctoral students through a pan-European doctoral program of international prestige.

Pillar II

Connect

top European researchers through a program of ELLIS Fellows and Scholars articulated through 14 pan-European research programs dedicated to diverse topics, including basic research in theory and algorithms, applications of AI in health and climate sciences, and research in humanistic aspects of AI.

Pillar III
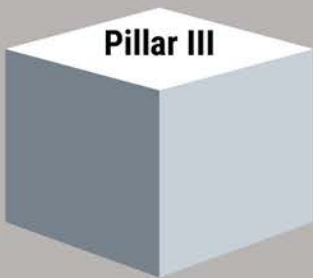
Create

a network of ELLIS Units located in prestigious European institutions, or created from scratch, to carry out research of excellence in modern AI in Europe, being the first support for the creation, in the medium term, of ELLIS Institutes, with a much more ambitious budget and dimension.

Pillar IV
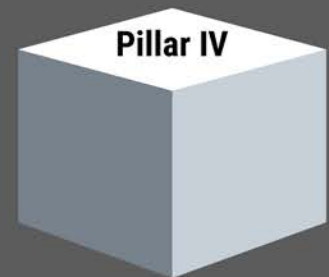
Develop

alliances with relevant companies, leading AI thinking at the European level through interactions and collaborations with European institutions and fostering entrepreneurship and research transfer. In this fourth pillar, we highlight that ELLIS is one of the founding partners of ADRA [1], the PPP in Europe dedicated to data, robotics and Artificial Intelligence.

[1] ADRA: European Partnership on Artificial Intelligence, Data and Robotics (Home - Ai Data Robotics Partnership (ai-data-robotics-partnership.eu))

"The ultimate goal of ELLIS is the creation of a network of ELLIS Institutes, located in different European countries and Israel, that are world leaders in basic research of excellence in modern AI."

Nuria Oliver
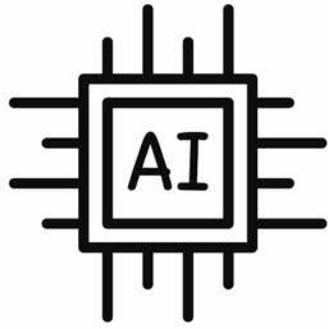
4.

ELLIS UNIT ALICANTE

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ALICANTE unit

Located in the Science Park at the University of Alicante

The ELLIS unit in Alicante is the only Spanish non-profit foundation devoted to research excellence in Artificial Intelligence focused on people, with the clear objective of contributing to social good.

Team

RESEARCHERS

Senior, junior and pre-doctoral researchers of recognized international prestige. Pre-doctoral researchers are part of the competitive ELLIS PhD program. At ELLIS Alicante we conduct open research in collaboration with researchers from universities and other research centers.

Nuria Oliver
Scientific Director and Cofounder

Francisco Escolano
Associate Researcher

Miguel Ángel Lozano
Associate Researcher

PhD STUDENTS

Aditya Gulati
ELLIS PhD Student

Adrián Arnaiz-Rodríguez
ELLIS PhD Student

Gergely D. Németh
ELLIS PhD Student

Piera Riccio
ELLIS PhD Student

Team

SUPPORT

Composed of professionals with proven skills, competencies and track record in the management of foundations and non-profit organizations, as well as in the management of science and research.

Rebeca de Miguel
Head of Operations

Cristina González
Office Manager

Members of the ELLIS Alicante team

HIGHLIGHTS

☑ 100% of scientific papers published in Q1 conferences and journals, such as NeurIPS, Science and Nature Scientific Reports

☑ Best Paper Award in Applied Data Sciences at ECML-PKDD 2021

☑ 1 article in the top 3% and another in the top 6% of all the research outputs analyzed by Altmetric

☑ + 50 invited talks

☑ + 100 reports and interviews in digital, printed, radio and TV

☑ XPRIZE Pandemic Response Challenge World Winners

☑ Abie Technology Leadership Award

☑ King James I Award in New Technologies

MILESTONES

We would like to highlight the following milestones achieved by this newly created Foundation to date:

1

In November 2019, the Generalitat Valenciana published the Valencian AI Strategy [1], where it commits financial support towards the creation of an ELLIS Unit in Alicante, such commitment being 1.5 million euros per year. The Generalitat Valenciana thus becomes an strategic ally, along with other European public institutions, for the achievement of the ambitious objectives of the ELLIS network at an international level, especially that of generating a European regional counterweight to retain, attract and train excellent research talent in Artificial Intelligence and thus contribute to the better economic development of our society. This commitment resulted in the presentation of a proposal for the creation of an ELLIS unit in Alicante, with the strong support of the Generalitat Valenciana as a public funding institution and the technical endorsement of the project by Dr. Nuria Oliver.

[1] https://presidencia.gva.es/es/web/campanyes/intelig enciaartificialcv

2

In December 2019, after a competitive evaluation and selection process by an international scientific committee, ELLIS Europe communicated the favorable evaluation of the proposal received to create an ELLIS Unit in Alicante. ELLIS Alicante became the only ELLIS Unit in Spain from the 17 units that were approved at that time.

MILESTONES

3

ELLIS Alicante's scientific mission is to address three broad areas of basic research in Modern AI:
(a) Artificial Intelligence to understand us, through the computational modeling of human behavior (both at the individual and aggregate levels) using Artificial Intelligence techniques;
(b) Artificial Intelligence with which we interact, through the development of interactive intelligent systems;
(c) Artificial Intelligence we trust, by addressing the ethical implications, challenges and limitations of Artificial Intelligence systems used for decision making.

4

To promote ELLIS Alicante, and following the principles of ELLIS Europe, on May 25th, 2020, the "Foundation of the Valencian Community ELLIS Unit Alicante" (Fundación de la Comunitat Valenciana ELLIS Alicante) was constituted. ELLIS Alicante is governed by the statutes recorded in the public deed of constitution of the foundation of the said date, which was registered in the Registry of Foundations of the Comunitat Valenciana, classified as a research entity, with registration number 236A by Resolution of June 25th, 2020, of the Autonomous Secretary of Justice and Public Administration of the Regional Ministry of Justice, Interior and Public Administration.

MILESTONES

5

ELLIS Alicante is constituted as a private non-profit foundation, which is not part of the instrumental public sector of the Generalitat, and whose mission and purposes, in summary, are: (a) carrying out basic scientific research of excellence in Artificial Intelligence by internationally renowned scientists employed by ELLIS Alicante; (b) generating positive economic and social impact in its territorial area of influence, attracting, retaining and training excellent research talent; and (c) contributing to research excellence in AI to boost the promotion of Europe as a prominent global player in this field.

The Generalitat Valenciana holds the honorary presidency of ELLIS Alicante, thus expressing the commitment to provide impulse and cooperation, adopted since its origin by the Generalitat Valenciana.

6

As a consequence of the COVID-19 pandemic, ELLIS Alicante has not been able to hire any staff or open its headquarters in the Alicante Science Park until October 2021. Currently, ELLIS Alicante has a General and Scientific Director, a Head of Operations, an Office Manager, two research associates and four PhD students from the ELLIS international PhD program. These students are the main organizers, with the support of the management team, of the II ELLIS Doctoral Symposium - EDS22 (19 -23 September 2022).

7

...

In December 2021, ELLIS Alicante launched its Scientific Advisory Board (SAB), with eight prominent international personalities of great scientific-research experience in the field of Artificial Intelligence. The main function of this Committee will be to advise and guide ELLIS Alicante in the research topics and projects it carries out, as well as to propose the opening of new research lines, identify excellent talent that could be interested in joining the unit, and give visibility to the different actions that ELLIS Alicante carries out.

MILESTONES

• • •

8

The members of the SAB are:

Krishna Gummadi, scientific director of theMax Planck Institute for Software Systems (MPI-SWS) (Munich, Germany); Adrian Weller, director of the AI Program at The Alan Turing Institute (London, UK); Emilia Gomez, principal investigator of the Human and Machine Intelligence (Humaint) at the Joint Research Center of the European Commission (Seville, Spain); Carlos Castillo, coordinating researcher of the Web Science and Social Computing (WSSC) research group at the Universitat Pompeu Fabra (Barcelona, Spain); Bruno Lepri, director and principal investigator of the Mobile and Social Computing Lab (MobS) at the Bruno Kessler Foundation (Trento, Italy); Tanzeem Choudhury, professor of Computer and Information Science at Cornell Tech University (New York, USA); Alex "Sandy" Choudhury, professor of Computer and Information Science at Cornell Tech (New York, USA); Alex "Sandy" Kessler, director of the Mobile and Social Computing Lab (MobS) at the Bruno Kessler Foundation (Trento, Italy). Alex "Sandy" Pentland, Director of the Connection Science and Human Dynamics Laboratories at MIT (Massachusetts, USA); Ramón López de Mántaras, Research Professor at the Consejo Superior de Investigaciones Científicas (CSIC) (Madrid, Spain).

All of them share with ELLIS Alicante a vision of the positive social impact of AI. Their diverse research is aimed at inventing the future of technology-assisted wellbeing, through new methods and applications of AI that contribute to ensuring beneficial outcomes for society.
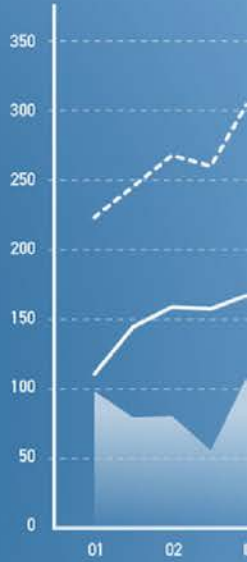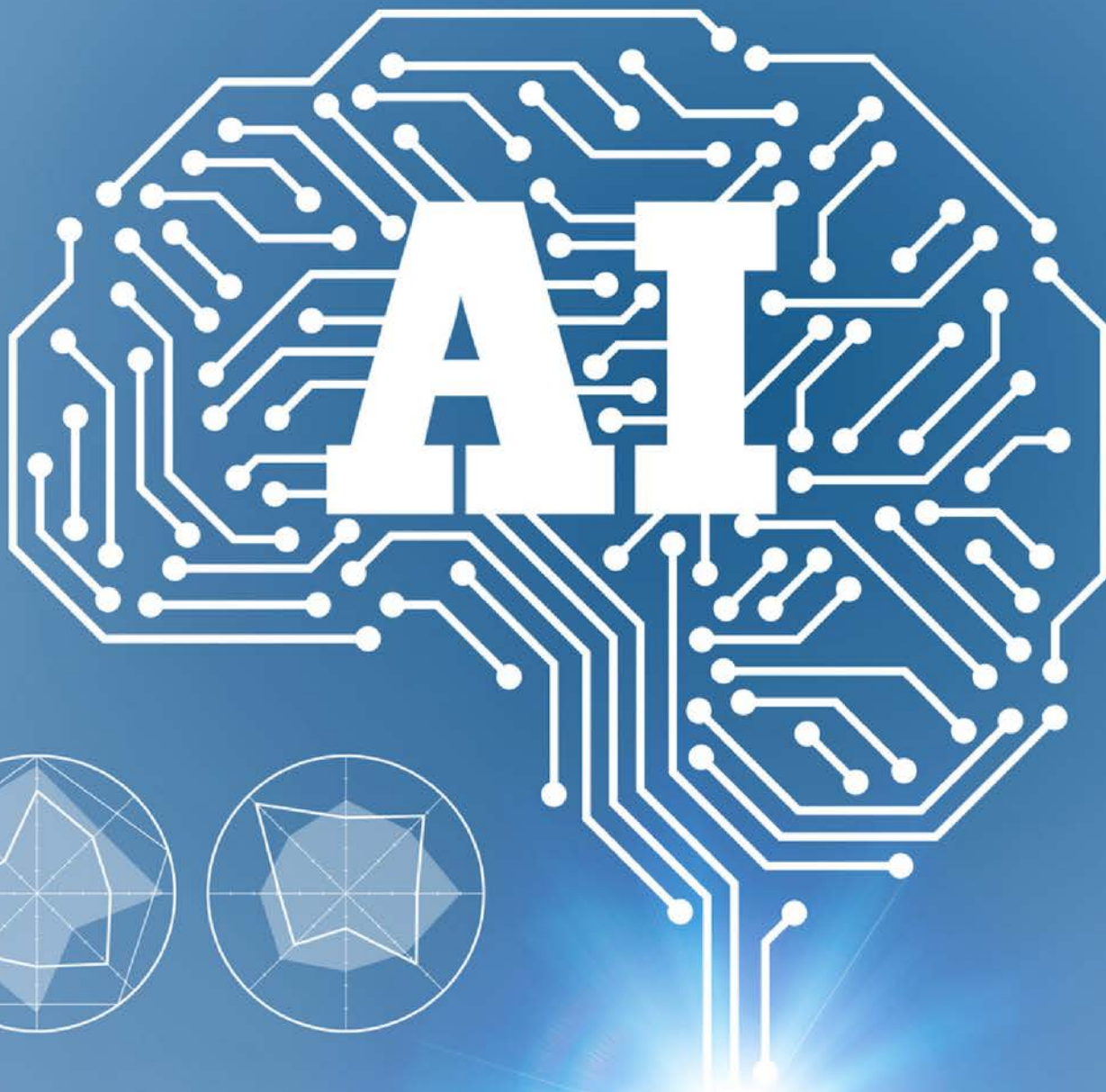
5. RESEARCH AREAS

THEORY ⟳ PRACTICE

Research in ELLIS Alicante is designed to contribute to progress by studying the intersection between AI and people. Thus, ELLIS Alicante's scientific mission is to address three broad areas of basic research in Modern AI:

Artificial Intelligence to understand us,

researching new computational models of human behavior using AI techniques both at the individual and aggregate levels. It consists of creating individual models that improve people's lives by recognizing and predicting their behavior. The practical applications are diverse, from the development of algorithms that generate recommendations for users or accurate and fair credit models to promote financial inclusion. At the aggregate level, the goal is to model and predict human behavior on a large scale, for a country or a region, which makes it possible to address challenges such as pandemics, detect potential economic crises or respond to natural disasters.

Artificial Intelligence that we trust,

addressing the ethical challenges of today's AI, such as algorithmic discrimination, the violation of privacy, opacity, the lack of veracity or the subliminal manipulation of human behavior. Current AI algorithms are not invulnerable and suffer from limitations that is important to identify and address in order to make their use inclusive and people-centered.

Artificial Intelligence that we interact with,

with a special focus on the research of new intelligent interactive mobile systems, personal assistants and chatbots.

6. RESEARCH PROJECTS

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Project 1 - Artificial Intelligence to Understand Us: Data Science in the Fight against COVID-19

The main research project on which the Foundation has focused its activity during 2021 is within the area of "Artificial Intelligence to understand us: Computational Modeling of Human Behavior" and it is called "Data Science against COVID-19".

This project has been led by ELLIS Alicante, through Dr. Nuria Oliver, and has been carried out in collaboration with more than twenty researchers from the Data Science Team in the Fight Against COVID-19 of the Generalitat Valenciana. The participating researchers are affiliated to the following universities and research centers of the Valencian Community: University of Alicante, Miguel Hernández University, CEU Cardenal Herrera University, Polytechnic University of Valencia, Jaume I University and FISABIO Foundation. The work described in this section corresponds to the joint work of this multi-disciplinary, inter-institutional team.

Computational Epidemiological Models

In this line of research, the team led by Dr. Oliver has developed three types of computational epidemiological models: (1) SEIR-type meta-population models, (2) individual agent-based models, and (3) models based on deep neural networks.

Computational epidemiological models allow both predictions about the evolution of the pandemic under the current conditions and predictions about its possible evolution under different scenarios of pandemic containment and control measures, pre-existing immunity, vaccination or contact tracing.

Research in the development of the three models started in 2020 so that in 2021 the focus has been on improving and updating two of the models, to take into account new virus variants, vaccination and pandemic evolution. In particular, research effort has been invested in extending the agent model and the deep neural network model, as detailed below.

2020-2022
2 years of research

INDIVIDUAL AGENT-BASED MODEL AND THE IMPACT OF VACCINATION AND TOURISM

The individual REINA-type agent model is extended to include different percentages of the vaccinated population and different tourist flows in the summer of 2021. The model with vaccination has been shown to be more accurate than the model without vaccination in predicting the number of cases, hospitalizations, ICU admissions and deaths.

Visualizations of agent-based model predictions with (green) and without (blue) taking vaccination into account
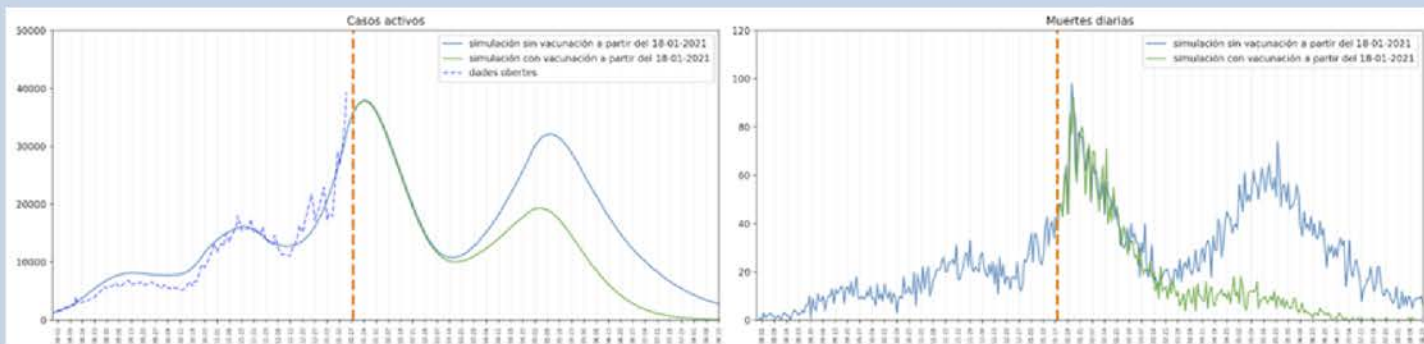
The results of the vaccination simulations (see figure), conducted in January 2021, accurately predicted a fourth wave of infections during the summer of 2021, but with much more moderate consequences than previous waves in terms of deaths, thanks to the positive impact of vaccination.

MODEL BASED ON DEEP NEURAL NETWORKS

At the end of December 2020, the first phase of research on the development of a computational epidemiological model using deep neural networks was completed. This model was part of the winning solution of the 500k XPRIZE Pandemic Response Challenge. This model was very useful in predicting the number of coronavirus cases during the third wave of infections in the Valencian Community, which took place in January 2021. The model predicted with high accuracy both the day when the peak of COVID-19 infections would occur and the maximum number of infections.

During 2021, the deep neural network model was extended to incorporate the level of vaccination of the population (in the manner of a non-pharmaceutical intervention) into the layer of the networks modeling "actions". This model has been shown to be more accurate in predicting the number of coronavirus cases than a model that does not incorporate vaccination as of summer 2021.

Predictions of the epidemiological model based on deep neural networks.
Left: predictions before the third wave. Right: predictions before the sixth wave for the Comunitat Valenciana.
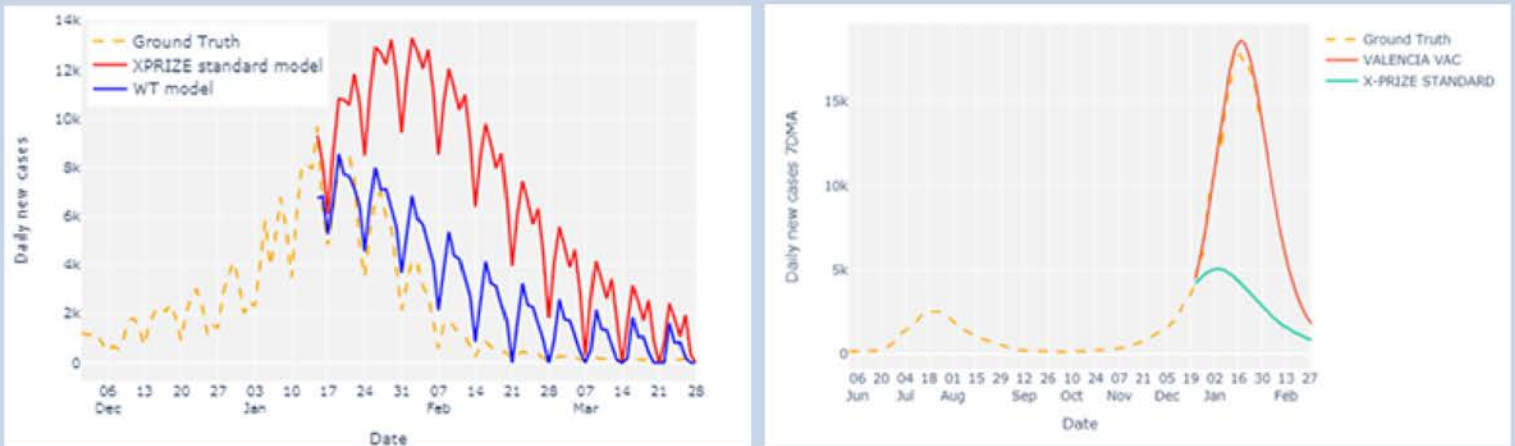
Architecture of the epidemiological model based on deep neural networks.
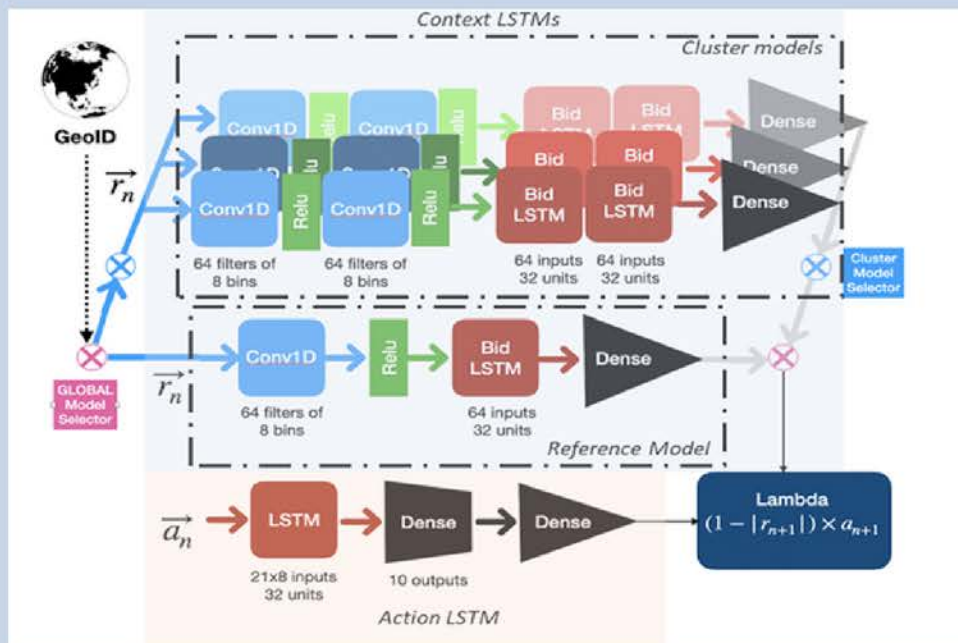
Model for recommending non-pharmacological interventions

This line of research consists of investigating and developing models to recommend non-pharmacological policy measures to be applied in 236 countries and regions of the world, which present the best balance between the economic and social cost derived from their application, and the expected number of COVID-19 cases if such policies were applied. In addition to researching and inventing algorithms to recommend policies for these 236 countries and regions of the world, we developed a visualization tool in Tableau.

Both the deep neural networks-based computational epidemiological model and the model for recommending non-pharmacological interventions have been published at the ECML-PKDD 2021 congress, obtaining the

Best Paper Award in Applied Data Science :

M.A. Lozano, O. Garibo i Orts, E. Piñol, M. Rebollo, K. Polotskaya, M.A. García-March, J.A. Conejero, F. Escolano, and N. Oliver. Open data science to fight COVID-19: Winning the 500k XPRIZE Pandemic Response Challenge. ECML-PKKD 2021. Bilbao, Sept. 13th-17th, 2021.

This work was also the worldwide winner of the first prize in the 500k Pandemic Response Challenge organized by the XPRIZE Foundation. It is the first time in history that a Spanish team has won an XPRIZE competition.

Citizen Science

During 2021 we continued our research with the citizen survey launched by ELLIS Alicante in March 2020 under the leadership of Dr. Oliver. Thanks to the implementation of weekly volunteer recruitment campaigns through Facebook, the development and weekly maintenance of a webpage with visualizations of all the results and the dissemination of these, this survey has already collected more than 720,000 responses from Spain, Italy, Germany and Brazil mainly, being one of the largest citizen surveys in the world related to the coronavirus.

The survey, launched in March 2020, is anonymous and it is structured in 26 questions that include demographic information about the participants (country, age, gender, zip code), their household situation (type of household, number of co-inhabitants in the household and their ages), their social behavior (individual protection measures, perception of safety of different activities, estimated number of close contacts, whether they have had close contact with someone infected with coronavirus, etc...), their perception of the measures taken to mitigate the pandemic, their employment and economic situation, the emotional impact the pandemic is having on their lives, and their health status.

In 2021 we adapted and extended the questions to the new pandemic situation, including questions to determine people's intention to be vaccinated, the most frequent socialization context including the risk of contagion associated with this context, and their level of social isolation according to the 6-question Lubben scale.

This survey is a valuable tool to shed light on vital issues for which there is no systematically captured data. The survey has been used regularly by the Generalitat Valenciana, the media and the public to access up-to-date information on the perception, attitudes and impact of the pandemic on our lives.

The results highlight the need to design gender and age specific public policies, implement psychological and economic support programs and address the obvious pandemic fatigue, as the success of possible future containments will depend on the willingness of the population to comply with them.

This research has been published in high impact articles in scientific journals in 2021, such as Nature Scientific Reports:

Marina Martínez-Garcia, Alejandro Rabasa, Xavier Barber, Kristina Polotskaya, Kristof Roomp, and Nuria Oliver. Key factors affecting people's unwillingness to be confined during the COVID-19 pandemic in Spain: a large-scale population study. In: Nature Sci Rep 11(1), 18626 (2021) [Altmetric score = 40, Top 6% of all the research outputs]

Marco De Nadai, Kristof Roomp, Bruno Lepri, and Nuria Oliver. The Impact of Control and Mitigation Strategies during the Second Wave of COVID-19 Infections in Spain and Italy. In: Nature Sci Rep 12, 1073 (estimated publication in early 2022)

Thought leadership in Data Science and the pandemic

Dr. Oliver has been one of the expert voices in the use of data and Artificial Intelligence in the fight against the COVID-19 pandemic. Since March 2020, she has not only led the Data Science team in the fight against COVID-19, but has also collaborated with some of the world's most recognized researchers in this area. As a result of these collaborations, she has co-authored two publications of extremely high impact, one of them published in 2021:

Mirco Nanni, Gennady Andienko, Albert Lázslo Barabási, Chiara Boldrini et al. Give more data, awareness and control to individual citizens, and they will help COVID-19 containment. In: Ethics and Information Technology, 2021 Feb 2;23(Suppl 1):1-6 (2021).
[Altmetric score = 81, Top 3% of all the research outputs]

Project 2 -- Artificial Intelligence that We Trust: Ethical Challenges and Limitations of Artificial Intelligence Systems.

Within this project, different lines of research have been developed:

Artificial Intelligence and Ethics

Today's increased availability of large amounts of human behavioral data and advances in Artificial Intelligence are contributing to a growing reliance on algorithms to make decisions important to people's lives, including those related to access to credit, medical treatment, hiring, etc. Decision-making processes by algorithms can lead to more objective decisions than those made by humans who may be influenced by bias, conflicts of interest, corruption, hunger or fatigue. However, algorithmic decision making has been criticized for its potential to lead to an invasion of privacy, information asymmetry, opacity, and discrimination.

In this research, we analyze and describe available technical solutions in three broad areas that we consider critically important to achieving human-centered AI: (1) privacy and data ownership; (2) accountability and transparency; and (3) fairness. We also highlight the importance and urgency of engaging multidisciplinary teams of researchers, practitioners, policymakers, and citizens to jointly develop and evaluate real-world algorithmic decision-making processes designed to maximize fairness, accountability, and transparency while respecting privacy.

Vision of a human-centric Artificial Intelligence
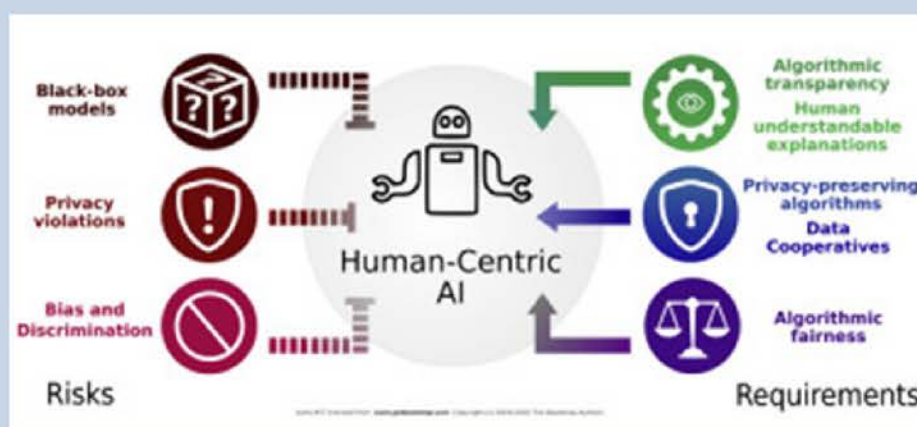
This research was carried out in collaboration with researchers from FBK (Italy) and MIT (USA) and has been published in iScience:

Federated Learning and Fairness
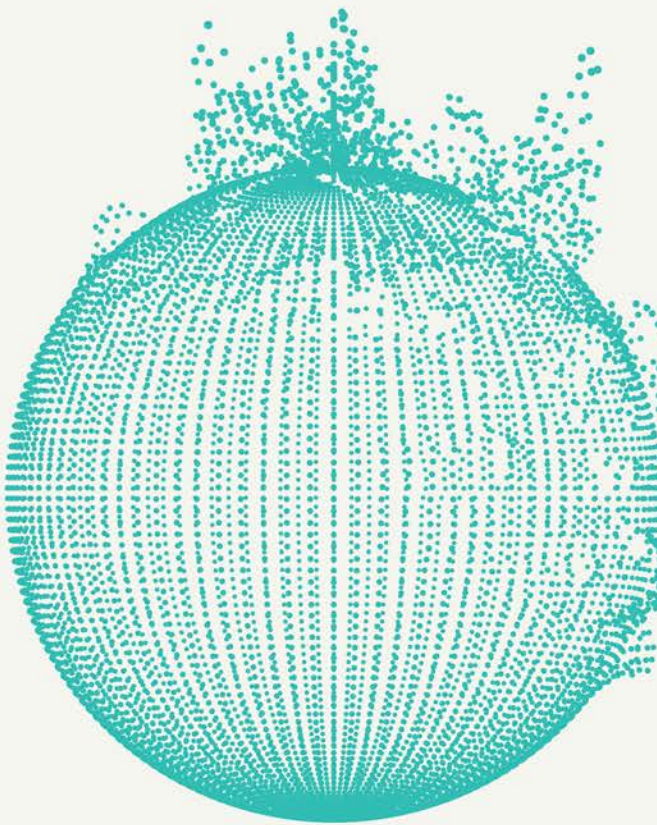
This line of research corresponds to the PhD thesis of Gergely D. Németh, an ELLIS PhD student who started his studies in November 2021. The planned topic of Gergely's research work is federated learning and algorithmic justice. Federated learning is an approach within machine learning that has recently emerged to solve privacy issues related to machine learning applications. Fairness or justice in Artificial Intelligence is also a field that has gained awareness in recent years. At the intersection of the two fields, we can find new solutions to problems that exist in centralized machine learning, but new problems also emerge that are unique to federated learning training architectures. In this PhD, Gergely will address them and work towards just and human-centered federated learning.

The Social Impact of Artificial Intelligence in Social Platforms

This line of research corresponds to the PhD thesis of Piera Riccio, a doctoral student in the ELLIS PhD program.

The topic proposed by Piera for her doctoral thesis deals with the social implications of Artificial Intelligence algorithms that are part of the social platforms used by billions of people. Social networking platforms are reshaping the flow of information in our society, establishing new paradigms of mass communication. Due to their ubiquitous nature, they constantly influence our daily choices, having a pervasive impact on different facets of our culture. On these platforms, AI algorithms are massively used, for example, to choose and moderate what we see, to provide automatic editing tools, and to boost (or hinder) the popularity of publications and users. In this paper, we want to analyze the implications of such platforms on our culture and our perceptions of certain social groups, including women. For example, while these effects may be hidden and difficult to decipher, it is critical to investigate the extent to which AI is contributing to the amplification of existing gender disparities. Furthermore, we wish to rethink the applications of AI in interacting with these platforms, limiting unethical behaviors with unhealthy and unfair outcomes for individuals and society as a whole.

Algorithmic Fairness, Graphs and Causality

This line of research corresponds to the doctoral thesis of Adrián Arnaiz-Rodríguez, an ELLIS PhD student.

The focus of Adrián's thesis is algorithmic fairness and transparency. Machine learning models are becoming the main tools to address complex social problems and are also increasingly implemented to make or support decisions about people in many important areas of their lives, from justice to healthcare. Therefore, the ethical implications of such decisions must be taken into account, including concepts such as privacy, transparency, accountability, trustworthiness, autonomy, and fairness. In addition, many of these concepts do not have universally accepted definitions. For example, different definitions of fairness may not be satisfied at the same time. In this thesis, the goal is to address these challenges by leveraging graph theory and causal models to develop individual and group machine learning algorithms and metrics that improve fairness, accountability, and transparency in algorithmic decision-making.

7.

OUTREACH ACTIVITIES AND RESULTS

ANNUAL
REPORT
2021

The dissemination of the activity of ELLIS Alicante and its research results is a fundamental pillar to ensure that such research achieves social impact and thus fulfills its mission and vision.

SCIENTIFIC PUBLICATIONS

Xue, H., Salim, F. D., Ren, Y., & Oliver, N. (2021). MobTCast: Leveraging Auxiliary Trajectory Forecasting for Human Mobility Prediction. Advances in Neural Information Processing Systems , 34, 30380-30391.

M.A. Lozano, O. Garibo i Orts, E. Piñol, M. Rebollo, K. Polotskaya, M.A. García-March, J.A. Conejero, F. Escolano, and N. Oliver. Open data science to fight COVID-19: Winning the 500k XPRIZE Pandemic Response Challenge. In: ECML-PKKD 2021. Bilbao, Sept. 13th-17th, 2021.

Best Paper Award winner in Applied Data Science

Marina Martínez-Garcia, Alejandro Rabasa, Xavier Barber, Kristina Polotskaya, Kristof Roomp, and Nuria Oliver. Key factors affecting people's unwillingness to be confined during the COVID-19 pandemic in Spain: a large-scale population study. In: Sci Rep 11(1), 18626 (2021).

[Altmetric score = 40, Top 6% of all research outputs]

Mirco Nanni, Gennady Andienko, Albert Lázslo Barabási, Chiara Boldrini et al. Give more data, awareness and control to individual citizens, and they will help COVID-19 containment. In: Ethics and Information Technology, 2021 Feb 2;23(Suppl 1):1-6 (2021).

[Altmetric score = 81, Top 3% of all research outputs]

Bruno Lepri, Nuria Oliver, Alex Pentland. Ethical machines: The human-centric use of artificial intelligence. In: iScience, 2021 Mar 19; 24(3): 102249.

N Oliver. When Philanthropy Meets Data Science: A Framework for Governance to Achieve Data-Driven Decision-Making for Public Good. Data Science for Social Good, 2021, 55-68

Talks and Seminars

On November 8, 2021 the Distinguished Lecture Series at the ELLIS Alicante Foundation was inaugurated. This scientific dissemination activity consists of inviting internationally distinguished researchers to visit the Foundation and give a scientific-academic lecture from which the entire scientific and educational community around the University of Alicante can benefit.

Dr. Ricardo Baeza-Yates, as Director of Research at the Institute for Experiential AI at Northeastern University (Palo Alto, California, USA) since January 2021, and a distinguished collaborator of ELLIS Europe and ELLIS Alicante, gave the inaugural lecture "AI Ethics: a challenging task" of the Distinguished Lecture Series. This activity is included in the context of ELLIS Alicante's support actions for the "ELLIS Europe and Israel Network", which include the reception and hosting of distinguished visitors.

The keynote lecture given at ELLIS Alicante was entitled "AI Ethics: A challenging task" and is part of the research project "Artificial Intelligence in which we trust: Ethical Challenges and Limitations of Artificial Intelligence Systems".

Dr. Ricardo de Baeza-Yates (left) with the research team at ELLIS Alicante

Presentations
in conferences, webinars and forums

The activities, research results and purpose of ELLIS Alicante have been widely disseminated through presentations in different forums, as well as collaborations with the media.

These activities have been carried out by Dr. Nuria Oliver as a researcher of ELLIS Alicante, who has participated in dozens of conferences and webinars related to the research activity of ELLIS Alicante described above, as well as with the ELLIS Alicante Foundation and ELLIS Europe, including:

001

Nuria Oliver. Keynote speech in Valencia Digital Summit 2021 about "Towards European Sovereignty in AI, Valencia, 16 December 2021.

002

Nuria Oliver. Keynote speech in INESC Brussels HUB Winter Meeting, High-level Conference on AI&Robotics, sobre "ELLIS: The European Laboratory for Learning and Intelligent Systems", 15 December 2021.

003

Nuria Oliver is speaker and moderator at the Foro Inteligencia Artificial organized by the Fundación Alianza Digital 2030, 1 December 2021.

004

Nuria Oliver is invited panelist at the IV International Conference on Artificial Intelligence, Alicante, Spain, 26 November 2021.

005

Nuria Oliver is keynote speaker at Euro-CASE 2021 annual conference – Engineering to build back better, with a talk entitled "ELLIS, The European Laboratory for Learning and Intelligent Systems", 26 November 2021.

006

Nuria Oliver. Keynote speech at CHI Greece 2021 about "Data Science against COVID-19", Greece (online), 25 November 2021.

007

Nuria Oliver. Keynote speech at EU Data Visualization Conference 2021 about "Data Science against COVID-19", USA (online), 23 November 2021.

008

Nuria Oliver is keynote speaker at the cátedra Ciudad de Castelló of the Universitat Jaume I with a talk entitled, "Artificial Intelligence: my personal experience", 18 November 2021.

009

Nuria Oliver is keynote speaker at the program Aquae STEM (online), 10 November 2021.

010

Nuria Oliver is keynote speaker at the Digital Government Conference of the Catalan Government about "Towards a socially sustainable AI", 9 November 2021.

011

Prof. Ricardo Baeza-Yates gives the inaugural talk of the Distinguished Lecture Series with the talk "AI Ethics: a challenging task ", 8 November 2021.

012

Nuria Oliver is a keynote speaker at the Ernest Lluch Foundation Dialogs about "Artificial Intelligence", Valencia, Spain, 5 November 2021.

013

NuriaOliver is keynote speaker at the Conference of the Spanish Internal Auditors Institute about "Towards a socially sustainable Artificial Intelligence", Madrid (online), 25 October 2021.
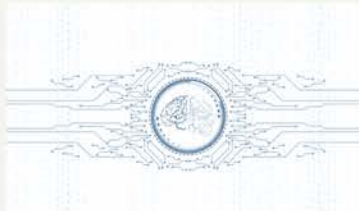
014

Nuria Oliver. Keynote speech at the 2021 Digitalize Stockholm Summit about "Data Science against COVID-19", Sweden (online), 21 October 2021.

015

Nuria Oliver is keynote speaker at the European Union Intellectual Property Office (EUIPO), Alicante, Spain, 19 October 2021.

016

Nuria Oliver is keynote speaker at the WDR MOOC of the World Bank about "Data for Better Lives: A New Social Contract" (online), 14 October 2021.
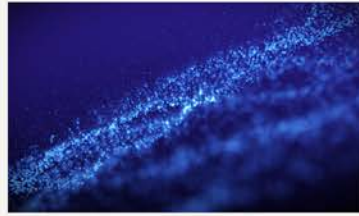
017

Nuria Oliver. Distinguished lecturer at Duke University about "Data Science against COVID-19", USA (online), 8 October 2021.

018

Nuria Oliver. Keynote speaker at the Innovations in Intelligent Systems and Applications Conference 2021 (ASYU'21) about "Data Science against COVID-19", Elazığ, Turkey (online), 7 October 2021.

019

Nuria Oliver is a keynote speaker at the Radia inaugural program of the ONCE Foundation about "A career on Artificial Intelligence", Madrid, Spain, 7 October 2021.

020

Nuria Oliver panelist at the ACM Europe Council webinar about "Getting recognized by ACM Awards and Honors" (online), 1 October 2021.


021

Nuria Oliver is keynote speaker at the opening ceremony of the LAB Mediterraneo Foundation about "Towards socially sustainable Artificial Intelligence", Valencia, Spain, 29 September 2021.

022

Nuria Oliver is keynote speaker at the Academic School year opening ceremony of the Saomar school with a talk about "Technology for Social Good", Valencia, Spain, 23 September 2021.

023

Nuria Oliver. Keynote speaker at the Data Centric Engineering Summit 2021 of the Alan Turing Institute about "Data Science against COVID-19", London (online), 23 September 2021.

024

Nuria Oliver is keynote speaker at the annual assembly of ANGED, Madrid, Spain (online), 1 September 2021.

025

Nuria Oliver is invited panelist at the Conference of the Spanish Property Registrars about "Humanism and Technology for Society", Valladolid, Spain (online), 17 September 2021.

026

Nuria Oliver. Keynote speaker at the conference about the impact of COVID-19 with a talk entitled "Data Science to understand the gender impact of COVID-19", Marqués de Valdecillas Library at the Universidad Complutense de Madrid, Spain, 16 September 2021.


027

Nuria Oliver speaks at the International Forum on Data and Artificial Intelligence in the Public Sector organized by CAF about "Responsible use of AI in the public sector", Telefonica Foundation Building, Madrid, Spain, 15 September 2021.

028

Nuria Oliver. Webinar at the Artificial Intelligence Center of the Sao Paolo University about "Data Science against COVID-19", Sao Paolo, Brazil (online), 9 September 2021.
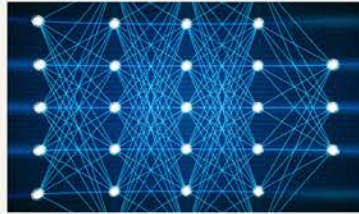
029

Nuria Oliver is co-organizer of the CACM Europe Region Special Section two-day Workshop (online), 25-26 August 2021.

030

Nuria Oliver. Keynote speaker at the webinar in "Advanced Machine Learning Days" (AMLD EPFL 2021) about "Data Science against COVID-19", Lausanne (online), Switzerland, 28 June 2021.

031

Nuria Oliver. Keynote speaker at Ikergazte 2021 about "Data Science against COVID-19", Basque Country (online), Spain, 10 June 2021.

032

Nuria Oliver. Keynote speaker at the interacademy cycle about COVID-19: Experiences of a pandemic organized by the Spanish Royal Academies with a talk on "Data Science against COVID-19", 1 June 2021.

033

Nuria Oliver. Keynote speaker at the ICLR 2021 workshop on "Artificial Intelligence and Health" with a talk on "Data Science against COVID-19", 7 May 2021.

034

Nuria Oliver is invited panelist at a session organized by the Presidents of the IEEE and the ACM about the future of engineering, 6 May 2021.

035

Nuria Oliver is keynote speaker at the event on Artificial Intelligence Policies in the Americas, 29 April 2021.

036

Nuria Oliver. Keynote speaker at the NOOC organized by the INTEF about Artificial Intelliengence with a talk on "Education and Artificial Intelligence", 28 April 2021.

037

Nuria Oliver. Keynote speaker at ASPLOS 2021 with a talk on "Data Science against COVID-19", 22 April 2021.

038

Nuria Oliver. Keynote speaker at the "Web of Health" special track within the World Wide Web conference with a talk on "Data Science against COVID-19", 21 April 2021.
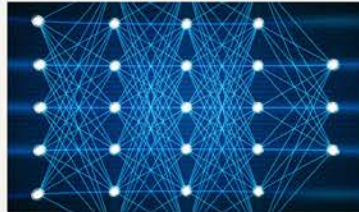
039

Nuria Oliver. Keynote speaker at the Artificial Intelligence for Social Good webinar organized by the IADB with the talk "Data Science against COVID-19", 31 March 2021.

040

Nuria Oliver is keynote speaker at the Women and Technology Forum organized by Verne with DIRCOM with a talk about "Women and Technology", 26 March 2021.

041

Nuria Oliver is keynote speaker at the Europe Digital Future Forum in collaboration with CIONET, 24 March 2021.

042

Nuria Oliver. Keynote speaker at the cycle of webinars called "Innovation for SDGs: inspirational tools towards sustainability challenges" organized by the Univ of Girona in collaboration with Global University Network for Innovation (GUNi), with a talk about "Data Science against COVID-19", 22 March 2021.

043

Nuria Oliver. Keynote speaker at ICWMR - Int Conf for Women in Multifaceted research – India with the talk "Data Science against COVID-19", India (online), 9 March 2021.

044

Nuria Oliver is keynote speaker at the webinar organized by the OECD about gender stereotypes in education, 8 March 2021.

045

Nuria Oliver is invited panelist at the CNMC conference on "Artificial Intelligence: challenges and opportunities", 5 March 2021.

046

Nuria Oliver is keynote speaker at the Conexus Day organized by the Conexus Foundation, with a talk on Artificial Intelligence, 4 March 2021.

047

Nuria Oliver. Keynote speaker at the AI CON 2021 conference organized by Bosch with the talk "Data Science against COVID-19", 3 March 2021.

048

Nuria Oliver is invited panelist at the EJECON Forum about "The value of data", 11 February 2021.

049

Nuria Oliver. Speaker at the event organized by the Spanish Royal Academies with a talk on "Data Science against COVID-19", 19 January 2021.

050

Nuria Oliver. Invited panelist at the 13th European Space Conference organized by the ESA in a session about "Building digital twin earths for a resilient society", 13 January 2021.

Media
appearances

The work of ELLIS Alicante, either through the Data Science team in the fight against COVID-19, the ValenciaIA4COVID team -led by Dr. Oliver-, or directly through Dr. Oliver, has appeared in dozens of articles in the written press (digital and print media), radio and television at all levels: local, regional, national and international.

MEDIA AGENCIES | SPAIN

- 09/03/2021, Un trabajo sobre el coronavirus de Nuria Oliver y Alberto Conejero, premiado en Los Ángeles | Ciencia | Agencia EFE

- 09/03/2021, Un modelo predictivo español coordinado por la ingeniera Nuria Oliver gana un desafío global para reactivar la economía (europapress.es)

NATIONAL MEDIA | SPAIN

- 09/03/2021, Premiado un proyecto tecnológico español para ayudar a reactivar la economía durante la pandemia | Tecnología | EL PAÍS (elpais.com)

- 09/03/2021,Un modelo predictivo español coordinado por la ingeniera Nuria Oliver gana un desafío global para reactivar la economía | Economía (elmundo.es)

- 09/03/2021, Un proyecto español de inteligencia artificial contra la Covid gana el XPrize - elEconomista.es

- 10/03/2021, El equipo de Nuria Oliver gana un desafío mundial en IA para reactivar la economía (elindependiente.com)

- 10/03/2021, El sistema de inteligencia artificial de un equipo español gana el desafío internacional 'Respuesta a la pandemia' (20minutos.es)

- 10/04/2021,Covid-19: La Comunidad Valenciana busca herramientas para afrontar otra ola de contagios | Comunidad Valenciana | EL PAÍS (elpais.com)

- 10/04/2021, La Inteligencia Artificial, un aliado para encontrar el equilibrio entre las restricciones y la pandemia (abc.es)

- 13/04/2021, La Generalitat Valenciana creará un Observatorio de Ciencia de Datos sobre la COVID-19 (eldiario.es)

- 08/06/2021, La astrofísica Licia Verde y la ingeniera Nuria Oliver ganan los Rey Jaime I dotados con 100.000 euros | Comunidad Valenciana | EL PAÍS (elpais.com)

- 09/06/2021,Nuria Oliver llama a aprovechar la inteligencia artificial para abordar los grandes retos sociales (lavanguardia.com)

- 27/07/2021, La inteligencia artificial salva vidas (y cuenta elefantes) | EL PAÍS Semanal | EL PAÍS (elpais.com)

- 13/09/2021, Nuria Oliver: "El país que domine la inteligencia artificial liderará la cuarta revolución industrial" | Futuro (elmundo.es)

- 17/09/2021, Un trabajo en el que participa la UMH recibe el 'Premio al mejor artículo en ciencia de datos aplicada' (elperiodic.com)

- 25/10/2021, IV Congreso de Inteligencia Artificial: ¿dónde queda Europa? (elindependiente.com)

- 28/10/2021, La Fundación Ellis Alicante impulsa la innovación para situar a España en la "élite" internacional de la IA (diariosigloxxi.com)

- 02/11/2021,España entra en la élite de la IA gracias a la Fundación Ellis Alicante (elindependiente.com)

- 02/10/2021, España entra en la élite de la inteligencia artificial (elespanol.com)

- 02/11/2021, España entra en la élite de la IA gracias a la Fundación Ellis Alicante (elindependiente.com)

- 03/11/2021, España entra en la élite de la IA gracias a la Fundación Ellis Alicante (vozpopuli.com)

- 8/11/2021, El programa Aquae Stem de Hidraqua reanuda sus webinars científicos con la alicantina Nuria Oliver (abc.es)

- 19/11/2021, Nuria Oliver (Fundación Ellis): "Aún existe una cultura sexista y misógina en la tecnología que infravalora a la mujer" (elespanol.com)

INTERNATIONAL MEDIA

- 09/03/2021, XPRIZE and Cognizant Announce Grand Prize Winners in Pandemic Response Challenge to Restart Economies Around the World | Business Wire

- 09/03/2021, PRESSEBOX (Alemania) XPRIZE und COGNIZANT geben die Gewinner des Hauptpreises der "Pandemic Response Challenge" zum Neustart der weltweiten Wirtschaft bekannt, Cognizant Technology Solutions GmbH, Pressemitteilung - PresseBox

50

▪ 09/03/2021, RTV Slovenia (Eslovenia) IJS-ju drugo mesto na mednarodnem natečaju za napredne rešitve v boju proti epidemiji - RTVSLO.si

▪ 09/03/2021, Revija Reporter (Eslovenia)Velik uspeh ekipe Instituta Jožef Stefan: z umetno inteligenco v boj proti pandemiji | Revija Reporter

▪ 09/03/2021, Delo (Eslovenia)Na meji z Italijo od srede brezplačno testiranje - Delo

▪ 09/03/2021 STA novice (Eslovenia)STA: Jožef Stefan Institute shares top prize in Pandemic Response Challenge

▪ 09/03/2021, Ansa.it (Italia)XPRIZE e Cognizant annunciano i vincitori del concorso Pandemic Response Challenge per la ripresa delle economie di tutto il mondo - ANSA.it

▪ 09/03/2021, Medtech (Global) Spanish Team's AI Model For Pandemic Response Named XPRIZE Winner :: Medtech Insight (informa.com)

▪ 09/03/2021 Biospace (Global) XPRIZE and Cognizant Announce Grand Prize Winners in Pandemic Response Challenge to Restart Economies Around the World | BioSpace

▪ 10/03/2021, Onvista Finanzportal (Alemania) XPRIZE und Cognizant geben die Hauptpreisgewinner der Pandemic Response Challenge zur weltweiten Wiederbelebung der Wirtschaft bekannt | news | onvista

▪ 10/03/2021, Pharmiweb (Global) XPRIZE and Cognizant Announce Grand Prize Winners in Pandemic Response Challenge to Restart Economies Around the World - PharmiWeb.com

▪ 12/03/2021, Business Review (Rumania) XPRIZE And Cognizant Announce Grand Prize Winners In Pandemic Response Challenge To Restart Economies Around The World - Business Review (business-review.eu)

▪ 08/09/2021, Wired. "How Valencia crushed Covid with AI"How Valencia crushed Covid with AI | WIRED UK

TV INTERVIEWS | SPAIN

▪ Negocios TV: Un PROYECTO ESPAÑOL de inteligencia artificial contra la Covid gana el XPRIZE | Negocios TV - YouTube

NATIONAL & REGIONAL RADIO | SPAIN

- 10/03/2021, AUDIO: Mediodia COPE Alicante (Miércoles 10 de marzo) - Alicante - COPE

- 10/03/2021, Comunidad Valenciana Informativos: Premio para la inteligencia artificial valenciana - 10/03/21 | RTVE Play

- 11/03/2021, Miguel Rebollo: "Nuestro modelo pronostica que habrá una cuarta ola mucho más suave aunque nos faltan datos por introducir" - 99.9 Plaza Radio (valenciaplaza.com)

- 14/03/2021, A vivir que son dos días, 11-12h - 14/03/2021 | Audio | A vivir que son dos días | Cadena SER

- 15/03/2021, Un equipo español gana un desafío mundial de IA (rtve.es)

- 02/09/2021, Nuria Oliver: "Seamos conscientes de hasta qué punto la inteligencia artificial modula nuestras decisiones" | Actualidad | Cadena SER

- 18/12/2021, Sapiens - Inteligencia Artificial con Nuria Oliver - 18/12/21 (rtve.es)

SHARED BY MEDIA AGENCIES | DIGITAL MEDIA IN SPANISH

- 09/03/2021, Un trabajo del virus de Nuria Oliver y Alberto Conejero, premio en Los Ángeles (eldiario.es)

- 09/03/2021, El equipo "Valencia IA4COVID" liderado por Núria Oliver gana un premio mundial sobre la pandemia - Levante-EMV

- 09/03/2021, Portaltic.-Un modelo predictivo español coordinado por la ingeniera Nuria Oliver gana un desafío global para reactivar la economía - Infobae

REGIONAL MEDIA | VALENCIAN REGION | SPAIN

- 09/03/2021, Un model valencià de predicció del coronavirus guanya el prestigiós premi XPrize a Los Angeles - À Punt (apuntmedia.es)

- 09/03/2021, El equipo de Nuria Oliver gana el desafío «Respuesta a la pandemia» de XPRIZE para reactivar la economía | NoticiasDe.es

- 09/03/2021, El equipo científico liderado por la Comisionada de la Generalitat Nuria Oliver recibe un premio internacional por su modelo de IA para la gestión de la pandemia (elperiodic.com)

- 10/03/2021, El equipo de Nuria Oliver gana el desafío "Respuesta a la pandemia" de XPRIZE para reactivar la economía (eldiario.es)

- 10/03/2021, Científicos valencianos ganan un premio mundial por su modelo de IA frente a la covid - Levante-EMV

- 03/05/2021, Entrevista Nuria Oliver: "El 24% de la población de la Comunitat está socializando en zonas de riesgo" - Valencia Plaza

- 04/08/2021, Nuria Oliver, primera española en ganar el premio Technical Leadership Abie (europapress.es)

- 16/12/2021, Nuria Oliver: "La Inteligencia Artificial es el corazón de la cuarta revolución industrial" - Valencia Plaza

LOCAL AND HYPERLOCAL MEDIA | VALENCIAN REGION | SPAIN

- 09/03/2021, El equipo de Nuria Oliver gana un desafío internacional para reactivar la economía con inteligencia artificial - Información (informacion.es)

- 09/03/2021, El equipo liderado por Nuria Oliver gana el desafío mundial en IA para reactivar la economía - Alicanteplaza

- 09/03/2021, Una herramienta de Inteligencia Artificial para mejorar las decisiones de los políticos sobre el covid - Información (informacion.es)

- 09/03/2021, El equipo liderado por Nuria Oliver gana el desafío mundial en IA para reactivar la economía - Valencia Plaza

- 09/03/2021, El equipo de Nuria Oliver gana el Desafío Mundial de Inteligencia Artificial por el Covid | ALICANTE PRESS | Noticias de Alicante, Comunidad Valenciana

- 09/03/2021, El estudio sobre la pandemia de Nuria Oliver y Alberto Conejero, premio XPrize en Los Ángeles - Alicante - COPE

- 09/03/2021, El equipo de la ingeniera alicantina Nuria Oliver gana un premio mundial por un proyecto para combatir la epidemia | Onda Cero Radio

- 09/03/2021, El modelo de predicción de la COVID-19 de la alicantina Nuria Oliver gana el concurso internacional XPRIZE | Actualidad | Cadena SER

- 09/03/2021, L'equip valencià liderat per Nuria Oliver guanya el desafiament "Resposta a la pandèmia" de XPRIZE per a reactivar l'economia (valenciaextra.com)

- 09/03/2021, Equipo científico recibe el primer premio | Castellón Información (castelloninformacion.com)

- 09/03/2021, El equipo científico valenciano recibe un premio internacional por su modelo para gestionar la pandemia - Valencia City

- 13/03/2021, Investigadores de la Universidad de Alicante ganan el premio del desafío "Respuesta a la pandemia" para reactivar las economías en todo el mundo - Información (informacion.es)

- 13/03/2021, El virus se frena en las universidades - Información (informacion.es)

- 14/04/2021, Dos proyectos científicos evaluarán los efectos de las vacunas (7televalencia.com)

- 14/04/2021, Puig reconoce en Valencia a un equipo de investigadores de la UMH por su lucha contra el coronavirus - Alicanteplaza

- 08/06/2021, Premios Rey Jaume I 2021: La alicantina Nuria Oliver, premio Jaume I de Nuevas Tecnologías (informacion.es)

- 04/08/2021, Nuria Oliver, primera española en ganar el premio Technical Leadership Abie - Información (informacion.es)

- 5/11/2021, Faltan trabajadores tecnológicos: el sistema educativo sólo genera una quinta parte de los necesarios - Información (informacion.es)

- 08/11/2021, «Usando los robots para trabajos repetitivos podemos reinventar la esclavitud pero en el sentido correcto» - Información (informacion.es)

- 16/12/2021, Nuria Oliver: "La Inteligencia Artificial es el corazón de la cuarta revolución industrial" - Valencia Plaza

- 19/12/2021, Nuria Oliver destaca el papel clave de la inteligencia artificial para resolver los retos de la humanidad - Castellonplaza

- 20/12/2021, Ellis Alicante pone en marcha su Comité Asesor Científico que reúne a expertos mundiales en IA - Alicanteplaza

- 20/12/2021, «Hoy, con más urgencia que nunca, es tiempo de ciencia» - Información (informacion.es)

INSTITUTIONAL MEDIA | SPAIN

- 09/03/2021, GVA.ES: El equipo científico liderado por la Comisionada de la Generalitat Nuria Oliver recibe un premio internacional por su modelo de IA para la gestión de la pandemia

- 09/03/2021, Investigadores de la Universidad de Alicante ganan el premio del desafío "Respuesta a la pandemia" para reactivar las economías en todo el mundo. Actualidad Universitaria

- 11/03/2021, Noticia UPV: El equipo Valencia IA4COVID, coordinado por Nuria Oliver y Alberto Conejero, se impone en la final internacional a 48 equipos de 17 países | Universitat Politècnica de València

- 19/03/2021, El equipo liderado por la Comisionada de la Generalitat Nuria Oliver gana el desafío mundial en Inteligencia Artificial para reactivar la economía | Invattur

- 27/09/2021, Luis Barcala recibe a Nuria Oliver, vicepresidenta de la Fundación Ellis Europa | Ayuntamiento de Alicante

THEMES AND OTHERS | SPAIN

- 09/03/2021, Nuria Oliver lidera el equipo ganador del XPrize, el desafío mundial en IA para reactivar la economía | Alicantec

- 09/03/2021, Un equipo valenciano gana el desafío 'Respuesta a la pandemia' | Zonamovilidad.es

- 09/03/2021, Un modelo predictivo español gana un desafío global para reactivar la economía (que.es)

▪ 09/03/2021, El equipo liderado por Nuria Oliver gana un desafío global para reactivar la economía - Noticia - Tendencias - Mas: Mujeres a seguir

▪ 09/03/2021, Un modelo predictivo español coordinado por la ingeniera Nuria Oliver gana un desafío global para reactivar la economía (sporthd.news)

▪ 10/03/2021, XPRIZE Y COGNIZANT DESVELAN LOS GANADORES DEL DESAFÍO "RESPUESTA A LA PANDEMIA" PARA REACTIVAR LAS ECONOMÍAS EN TODO EL MUNDO | Estrategias de Inversión (estrategiasdeinversion.com)

▪ 12/03/2021, IA española anti Covid triunfa en un certamen | N-Economia

▪ 15/03/2021, Un proyecto español ayuda a gestionar la crisis de la covid con inteligencia artificial | TECNOLOGÍA | ComputerWorld

▪ 16/03/2021, ValenciaIA4Covid19, primer puesto en los premios XPrize (bigdatamagazine.es)

▪ 16/09/2021, La prensa internacional alaba el sistema de Inteligencia Artificial anticovid de Valencia (menshealth.com)

▪ 24/10/2021, La prensa internacional alaba el sistema de Inteligencia Artificial anticovid de Valencia (menshealth.com)

▪ 04/11/2021, El programa Aquae Stem reanuda su ciclo de webinars científicos para impulsar el desarrollo vocacional de las niñas en este campo (eleconomista.es)

▪ 16/11/2021, Nuria Oliver y cómo la excelencia científica ha convertido a Alicante en uno de los epicentros de la inteligencia artificial europea - innovación en español (innovaspain.com)

OPINION LEADERS, INFLUENCERS AND PUBLIC FIGURES | SPAIN

▪ 09/03/2021, Comisión Nacional del Mercado y la Competencia:
ohttps://twitter.com/CNMC_ES/status/1369388453914435589

▪ 09/03/2021, PSOE Valencia:
ohttps://twitter.com/SocialistesVal/status/1369216290968264704

▪ 09/03/2021, Real Academia Ingeniería:
https://twitter.com/AmigosIng/status/1369296018131521544

- 09/03/2021, Asociación RUVID: https://twitter.com/asociacionruvid/status/1369333104549183493

- 09/03/2021, Javier Recuenco: https://twitter.com/Recuenco/status/1369211895211769857

- 10/03/2021, Carme Artigas (secretaria Estado Digitalización e IA):
ohttps://twitter.com/carmeartigas/status/1369577856804810754

- 10/03/2021, Ángel Martín Gómez (informativo matinal):
https://twitter.com/angelmartin_nc/status/1369536202496442369

- 10/03/2021, Centro de investigación Príncipe Felipe:
ohttps://twitter.com/CIPFciencia/status/1369594352574554114

- 10/03/2021, Real Sociedad Española de Matemáticas:
https://twitter.com/RealSocMatEsp/status/1369580611665604614

- 10/03/2021, Anousheh Ansari (astronauta):
https://twitter.com/AnoushehAnsari/status/1369485896911708163

- 10/03/2021, Kees Blokland (Agriterra):
https://twitter.com/KeesBloklandPhD/status/1369256808083316745

- 10/03/2021, Antonio Lorenzo (El Economista):
ohttps://twitter.com/antoniolorenzo/status/1369219931993223169

OTHER | SPAIN

- 19/11/2021, Inicio - Actividades y Agenda - Entrega de la 33ª edición de los "Premios Rei Jaume I" (casareal.es)

- 10/12/2021, No es ciencia ficción: claro que puedes (y debes) incorporar la IA al modelo de negocio de tu empresa (eldiario.es)

- 21/12/2021, Oliver: "La línea entre persuasión y manipulación en IA es fina" (economia3.com)

- 26/12/2021, [Audio] Congreso Futuro: Todos los detalles de la versión 2022 del Congreso Futuro - Cooperativa.cl

8.
COLLABORATIONS AND ALLIANCES

During the year 2021, ELLIS Alicante has maintained two major scientific collaborations at the European level that are an integral part of its research activity:

1 Dr. Oliver has led the Data Science against COVID-19 taskforce, a diverse and multidisciplinary team composed of researchers from different universities and research centers in the Valencian Community, with the aim of supporting decision making related to the pandemic through data analysis and Artificial Intelligence.

Data Science against COVID-19 Taskforce

This team is composed of the following researchers and scientists:

- Universitat Jaume I: Joaquín Huerta Guijarro, Marina Martínez García, Juan Camilo Gómez Esguerra, Emilio Sansano Sansano, Rubén Femenía Carrascosa.

- Universitat d'Alacant: Francisco Javier Escolano Ruiz, Miguel Ángel Lozano Ortega, Juan Carlos Trujillo Mondéjar.

- Universidad Miguel Hernández: Alejandro Rabasa Dolado, Aurora Mula Leal, Jose Xavier Barber Vallés, Kristina Polotskaya, Elisa Espín Gallardo.

- Universitat Politècnica de València: José Alberto Conejero Casares, Miguel Rebollo Pedruelo, Manuel Guillermo Portolés, Víctor de Elena, Miguel Ángel García-March, Oscar Garibo Orts, Eloy Piñol Jiménez.

- Universidad CEU Cardenal Herrera: Antonio Falcó Montesinos.

- FISABIO: Adolfo López Cerdán.

The results of this team's collaborative research have been presented in the research projects section.

2

As a member of the ELLIS Network of Scientific Excellence, the ELLIS Alicante Unit has participated and contributed to this network through different activities.

ELLIS Europe

Membership in the ELLIS Board

Firstly, through Dr. Oliver's participation in the governing body of ELLIS Europe as vice-president of its board. This position entails the participation in weekly working meetings to plan and organize the activities and actions promoted by ELLIS Europe through its different pillars: ELLIS research programs, ELLIS PhD program, ELLIS units and industrial alliances. In addition to the weekly meetings, Dr. Oliver has given talks in different forums to present ELLIS and ELLIS Alicante, including:

Nuria Oliver. Invited speaker at the Valencia Digital Summit 2021 on "Towards European Sovereignty in AI", Valencia, 16 December 2021.

Nuria Oliver. Panelist at the national InfoDay event on Artificial Intelligence organized by CDTI (https://eventos.cdti.es/ES/2021_Infoday_InteligenciaArtificial) with a talk on ELLIS, The European Laboratory for Learning and Intelligent Systems, 16 June 2021.

Nuria Oliver. Invited panelist at the European Vision for AI 2021 event with a talk on "ELLIS, The European Laboratory for Learning and Intelligent Systems", 22 April 2021.

Nuria Oliver. Invited speaker at the CFIS 2021 Forum event, organized by the Interdisciplinary Training Center (CFIS) of the Universitat Politècnica de Catalunya (UPC) with a talk on "ELLIS: The European Laboratory for Learning and Intelligent Systems", 3 March 2021.

She has also traveled to Berlin to speak at the event on Artificial Intelligence organized by Axel-Springer, including the reception of the German Award for Innovation in Artificial Intelligence on behalf of ELLIS Europe, September 2021.

Human-centric Machine Learning ELLIS Research Program

Secondly, ELLIS Alicante actively contributes to the ELLIS Human-centric Machine Learning (HCML) research program, as Dr. Oliver is co-director of this program, together with Prof. Plamen Angelov from Lancaster University (UK) and Prof. Adrian Weller from Cambridge University and the Alan Turing Institute (UK). The ELLIS HCML program has organized two international workshops in 2021:

Workshop (online format) on "Human-centered AI" within NeurIPS 2021 (35th Conference on Neural Information Processing Systems), held on December 13, 2021 (https://sites.google.com/view/hcai-human-centered-ai-neurips/home). NeurIPS is one of the most prestigious Artificial Intelligence conferences in the world. This workshop featured invited papers from four leading researchers in human-centered Artificial Intelligence: Cecilia Aragon from the University of Washington (USA), Barbara Poblete from the University of Chile (Chile), Wendy Mackay from Inria (France) and Cynthia Rudin from Duke University (USA). It also included the presentation of papers selected from those sent by different researchers to participate in the workshop.

Workshop (online format) on "Human-centric Machine Learning", held on May 10, 2021 (https://sites.google.com/view/hcml2021), which featured invited papers from 10 excellent researchers in human-centric Artificial Intelligence, including Dr. Eric Horvitz from Microsoft, Dr. Moritz Hardt from UC Berkeley and Fernanda Viegas from Google/Harvard, all from the USA.

ELLIS PhD Program

Thirdly, ELLIS Alicante is an active participant in the ELLIS PhD program as it is the primary institution for 4 of the students in the program, as well as the secondary host institution for a fifth student. All students in the ELLIS PhD program are co-supervised and are affiliated with a primary and a secondary institution, where they stay for a minimum of 6 months.
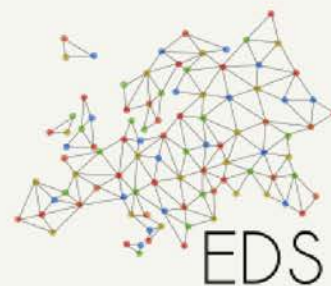
The ELLIS PhD program aims to generate synergies among all its students and between students and scientists from the ELLIS network, as an essential part of its goal to create a highly collaborative and structured research fabric in Europe. Thus, 2021 saw the inauguration of what will be an annual series of ELLIS Doctoral Symposia. The first ELLIS Doctoral Symposium 2021 was held from September 27 to October 1, in Tübingen, Germany (ELLIS Doctoral Symposium 2021 (ellisds.eu)). The event was organized by ELLIS Europe and was aimed at all doctoral students whose doctoral thesis is supervised by an ELLIS Europe member, with all students already selected to participate in the ELLIS doctoral program being invited to attend.

In addition to hosting these doctoral students, ELLIS Alicante has been selected to be the organizer of the II ELLIS Doctoral Symposium to be held in Alicante in September 2022. This organizing role will provide high visibility to ELLIS Alicante, both within the network and in the international scientific context, as it is the main scientific event of the ELLIS doctoral and postdoctoral program. During 5 days, it is estimated that 200 pre and postdoctoral researchers will participate in scientific sessions to share their research and exchange knowledge. It is also planned to invite several internationally distinguished speakers to give keynote lectures within the context of the conference.

Human-centric Machine Learning Reading Group

As part of the outreach activities within the ELLIS network, the PhD students of ELLIS Alicante organize a bi-weekly reading group [1] on different topics within the field of Human-centric Machine Learning. This group started in November 2021. It has dozens of international participants.

The HCML reading group aims to bring together researchers and students interested in both gaining a broad view of the area and going deeper into it. To get a clear understanding of how algorithmic and human decisions influence each other, we discuss articles on different topics within HCML, and also delve into new problems, different approaches and sources of biases.

The dynamics of the work is open and democratic. For each session, all participants can propose a scientific paper, and the paper to be read and discussed is chosen by a vote of all participants.

[1] https://ellisalicante.org/readingGroup

Collaborations

During the year 2021, ELLIS Alicante has collaborated and established alliances with different researchers affiliated to the following academic, scientific and corporate entities.

Scientific Advisory Board

The Alan Turing Institute

MIT Connection Science
the technology of innovation

European Commission

Cornell University

FBK
FONDAZIONE BRUNO KESSLER

MAX PLANCK INSTITUTE FOR SOFTWARE SYSTEMS

upf. Universitat Pompeu Fabra Barcelona

CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

Research Projects

Universitat d'Alacant
Universidad de Alicante

CEU
Universidad Cardenal Herrera

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

UJI UNIVERSITAT JAUME I

UNIVERSITAS Miguel Hernández

Fundación Fisabio

Publications...

Below is a list of some of the entities with which we have collaborated in the publication of scientific articles:

A? Aalto University

CEU CENTRAL EUROPEAN UNIVERSITY

CITY UNIVERSITY LONDON

DALHOUSIE UNIVERSITY

DATA-POP ALLIANCE

eit Digital

DFKI German Research Center for Artificial Intelligence

ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich

Fraunhofer IAIS

eurecat Centre Tecnològic de Catalunya

FBK FONDAZIONE BRUNO KESSLER

UJI UNIVERSITAT JAUME I

ISI

ISTI ISTITUTO DI SCIENZA E TECNOLOGIE DELL'INFORMAZIONE "A. FAEDO"

KING'S College LONDON

Maynooth University National University of Ireland Maynooth

MIT Massachusetts Institute of Technology

mit media lab

Microsoft

Northeastern University

... Publications

PAN
POLISH ACADEMY of SCIENCES

PENNSTATE
1855

DTU
Technical University
of Denmark

Sant'Anna
School of Advanced Studies – Pisa

tu technische universität
dortmund

TUDelft
Delft
University of
Technology

UMEÅ
UNIVERSITY

Universitat d'Alacant
Universidad de Alicante

UNIVERSITÀ DEGLI STUDI
DI TRENTO

UNIVERSITAS
Miguel Hernández

UNIVERSITAT
ROVIRA i VIRGILI

UNIVERSITÀ DI PISA

UOC Universitat
Oberta
de Catalunya

UNIVERSITÀ
DEGLI STUDI
DI TORINO

UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

Utrecht University

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9.

ANNUAL
REPORT
2021

AWARDS AND
RECOGNITIONS

2021 has been a singularly special year, as the Foundation's research and/or its research staff have received exceptional recognitions that are extremely difficult to achieve. In particular, we highlight:

500k XPRIZE Pandemic Response Challenge Award (March 2021)

The work co-led by Dr. Oliver in the context of the VALENCIAIA4COVID team was declared the global winner of the 500k XPRIZE Pandemic Response Challenge for having developed innovative computational epidemiological models with high predictive capacity of the pandemic curve in 236 countries/regions of the world, as well as for creating a novel recommendation system for non-pharmacological measures that considers both the economic cost of such measures and their epidemiological impact. This is the first time that a Spanish team has won an XPRIZE competition.

VentureBeat Women in AI Award
(July 2021)

Dr. Oliver has been awarded the Women in AI Award in the Artificial Intelligence Research category by VentureBeat. This award recognizes individuals who have had a significant impact on Artificial Intelligence research, helping to accelerate progress, either within their organizations or as part of academic research, or even impacting Artificial Intelligence approaches in general. It is the first time that a Spanish researcher is recognized with this worldwide award.

Best Paper Award
(Applied Data Science Track) at ECML-PKDD 2021
(September 2021)

Dr. Oliver is the senior scientist in the publication: "Open Data Science to fight COVID-19: Winning the 500k XPRIZE Pandemic Response Challenge", Lozano, M.A., Garibo, O., Piñol, E., Rebollo, M., Polotskaya, K., Garcia-March, M.A., Conejero, J.A., Escolano, F. and Oliver, N.. In: Proc. of European Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD'21), Bilbao, Spain.

© Anita B. Org / Grace Hopper Celebration 2021

Technical Leadership Abie Award
(September 2021)

Awarded by AnitaB.org. This is the most important award given by AnitaB.org to recognize the technical contributions and leadership of a woman in Computer Science. It is the first time that a Spanish researcher is awarded with this worldwide prize.

ELLIS Europe receives the German Innovation
Award in Artificial Intelligence
(September 2021)

Dr. Oliver, by virtue of her role as Vice President of ELLIS Europe, participated as a speaker at the award ceremony of the German Innovation Prize for Artificial Intelligence awarded to ELLIS Europe together with CLAIRE in Berlin.

Holger Hoos (CLAIRE) and Nuria Oliver (ELLIS) receive the award in Berlin on September, 30 2021.
© Christian Hahn

King James I Award in New Technologies (November 2021)

Nuria Oliver (middel) together with his Majesty the King of Spain

Dr. Oliver has been awarded the King James I Award in New Technologies (Premio Rei Jaume I en Nuevas Tecnologías) for her fundamental contributions to the development of Artificial Intelligence methods for modeling human behavior, including its uses for Social Good.

10.

FUNDING
AND
SPONSORSHIPS

Sponsorships

Public Entities

In order to comply with the Valencian Strategy for Artificial Intelligence, the Administration of the Generalitat Valenciana committed itself to financially support the creation of an ELLIS Unit in Alicante, with a commitment of 1.5 million euros per year. The Generalitat Valenciana thus becomes an outstanding ally, along with other European public institutions, for the achievement of the ambitious objectives of ELLIS on an international scale, especially that of generating a European regional counterweight that allows to retain, attract and train excellent research talent in Artificial Intelligence and thus contribute to the better economic development of our society.

This commitment was specified in the Resolution of June 22, 2020, of the Regional Minister for Innovation, Universities, Science and Digital Society, approving the Strategic Grants Plan for the period 2020-2023. In accordance with this commitment and the provisions of the aforementioned Resolution, Law 4/2020, of December 30, of the Budget of the Generalitat for the fiscal year 2021 established in Program 121.71 a grant called Suport a la investigació d'intelligència artificial d'excellència en el Node ELLIS, with the code S8391000 of nominative character, in favor of the Foundation of the Comunitat Valenciana Unit ELLIS Alicante (hereinafter ELLIS Alicante) for an amount of 1,500,000 €.

The source of obligations of the grant provided for in the aforementioned line, was regulated by an agreement signed on September 2, 2021, between the Administration of the Generalitat Valenciana, through the Department of Innovation, Universities, Science and Digital Society, and ELLIS Alicante, under the name "Singular Agreement between the Generalitat, through the Conselleria de Innovación, Universidades, Ciencia y Sociedad Digital, and the Fundación de la Comunitat Valenciana Unidad ELLIS Alicante, to collaborate in the financing of its operation and for the promotion of research in artificial intelligence, during the year 2021".

Private Entities

In order to help ELLIS Alicante in its mission, there are different possible types of contributions and donations from companies and other collaborating institutions, aligned with the ELLIS Europe sponsorship program.

We are tremendously grateful for the generous contributions of our donors and patrons. Their alliance with the mission and goals of ELLIS Alicante motivates us to continue on the path we have embarked on.

Gracias!

Silver

B Sabadell
Fundación

Micro-funding

globeducate
Shaping the world

MUTUALIDAD
ABOGACÍA

Registradores
DE ESPAÑA

VARIANZA

INVERSIÓN INDEPENDIENTE

Saomar
COLEGIO MAYOR

Int.

Instituto de
AuditoresInternos
de España

Competitive funding

ELLIS Alicante has received competitive funding for the development of collaborative research projects from the following entities:
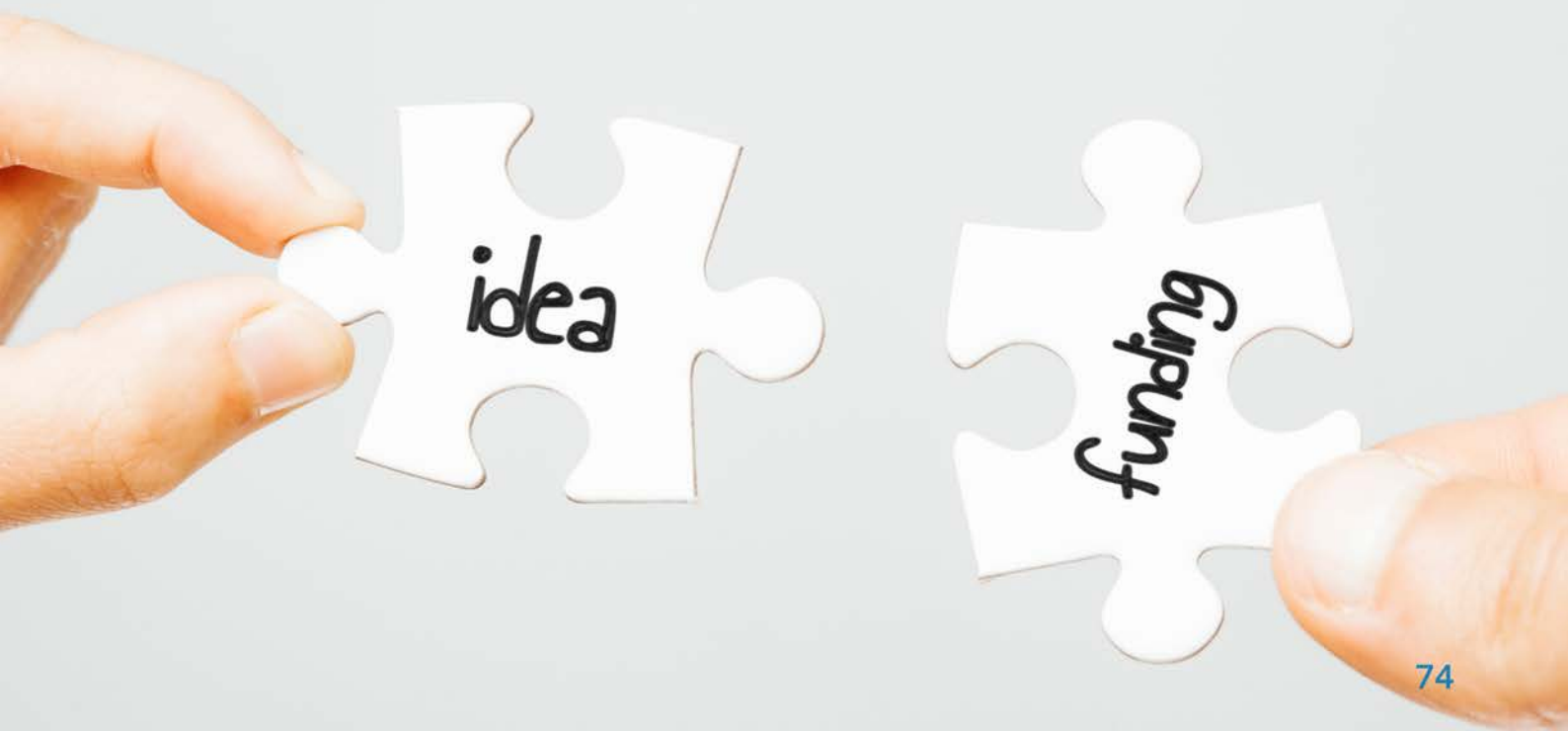
Collaborate with ELLIS Alicante

We are looking for collaborators to join our journey to make Artificial Intelligence a formidable force for Social Good. If you share our vision and want to be part of a sustainable future, below we summarize different sponsorship options to ELLIS Alicante that we can customize to meet the needs of your organization.

Collaborate with the ELLIS Network

Sponsors of the ELLIS Network of Scientific Excellence already include some of the major industry players and key stakeholders in the study and development of AI. All sponsors of the ELLIS Alicante Unit from Bronze level onwards also become ELLIS sponsors and are entitled to the benefits offered by the European network. Collaborating with ELLIS Alicante means contributing to the development and growth of the ELLIS network through the ELLIS PhD and postdoctoral programs, research workshops, mobility and exchanges and all the creative networking options offered by the network.

Benefits

Our donors will receive invitations to all public events organized by ELLIS Alicante, without restrictions. All will receive a distinctive pin and explicit recognition, depending on their level of sponsorship, in the foundation's annual report of activities. In addition, they will benefit from attractive tax deductions for donations made to a non-profit foundation.

Interested?

PLEASE, VISIT OUR WEBSITE:
WWW.ELLISALICANTE.ORG/DONATE
OR WRITE TO:
DONATE@ELLISALICANE.ORG

LEVEL	ANNUAL CONTRIBUTION	BENEFITS
PLATINUM	**500,000** euro first year **200,000** euro next years (min 2 years) + **20,000** euro contribution to ELLIS Europe + VAT	• Option to have a seat on the board of trustees • Option to name an event, lab, award, or scholarship • Privileged access to the ELLIS network of experts • Privileged access to the latest advances in AI • Option to propose challenges and fund or collaborate on research projects that are aligned with the Foundation's objectives • Joint organization and/or participation in workshops, bootcamps, panels, conferences and symposia • Yearly talks delivered by the ELLIS Alicante scientists • Collaboration in CSR programs • Option to propose internships for the PhD students • Unlimited visits to ELLIS Alicante • Logo in all communication material • Option to publish content in the ELLIS newsletter
GOLD	**100,000** euro per year + **20,000** euro contribution to ELLIS Europe + VAT (Total contribution is equivalent to the partial funding of 4 PhD scholarships or 2 postdocs)	• Privileged access to the ELLIS network of experts • Privileged access to the latest advances in AI • Option to propose challenges and fund or collaborate on research projects that are aligned with the Foundation's objectives • Joint organization and/or participation in workshops, bootcamps, panels, conferences, and symposia • Yearly talks delivered by the ELLIS Alicante scientists • Collaboration in CSR programs • Option to propose internships for the PhD students • Annual visit to ELLIS Alicante with other gold sponsors • Logo in all communication material • Option to publish content in the ELLIS newsletter
SILVER	**50,000** euro per year + **10,000** euro for ELLIS Europe + VAT (Total contribution is equivalent to partial funding of 2 PhD scholarships or 1 postdoc)	• Joint organization and/or participation in workshops, bootcamps, panels, conferences, and symposia • Collaboration in CSR programs • Option to propose internships for the PhD students • Logo in all communication material • Option to publish content in the ELLIS newsletter
BRONZE	**25,000** euro per year + **5,000** euro for ELLIS Europe + VAT (Total contribution is equivalent to partial funding of 1 PhD scholarship or 1 postdoc)	• Preferential access to education actions • Collaboration in CSR programs • Option to propose internships for the PhD students • Logo in all communication material • Option to publish content in the ELLIS newsletter
FRIENDS	**5,000 – 25,000** euro	• Acknowledgement in the annual report and the website
MICRO-FINANCING	Up to **5,000** euro	• Acknowledgement in the annual report and the website

Acknowledgments

We would like to thank all our employees, members of the ELLIS network, scientific collaborators, institutions, organizations, suppliers, professionals, family and friends for their continuous support in our daily work, without which the dream of ELLIS Alicante would not be possible.

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2021

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