



Artificial Intelligence Partnership Chair

The LIAvignon Chair

Combining academic and industrial expertise for efficient and ethical language technologies

A partnership chair

The “partnership chair” program of Avignon University aims to support sustainable partnerships in strategic research areas, to support the scientific priorities of the research laboratories, and to accelerate investment in its priority research areas by strengthening the link between research and education.

LIAvignon, the artificial intelligence partnership chair, is part of the “Culture, Heritage, Digital Societies” axis. It focuses on **the human being seen through the lens of language technologies**, according to the three following axes: the speaker, the voice and the speech. This chair was founded by the Avignon Computer Science Laboratory (LIA), Orange AI, Airbus D&S, Ingenico Group, Bertin IT, LNE, Validsoft, Orkis and the Cerco Group. It also relies on the Centre d'enseignement et de recherche en informatique (CERl), with its master's degree in computer science dedicated to artificial intelligence.

The LIAvignon chair endeavors offer direct applications in numerous sectors, including voice technology and services, the medical domain, security and defense.

Scientific program

The LIAvignon scientific program, as defined by their founding members, is pragmatic and ambitious. It takes into account scientific advances, industrial needs and societal demands. It is an ambitious research program because it aims to create breakthroughs, and a pragmatic one because it listens to the needs of the industry. This program focuses on **voice authentication, speech recognition, machine translation, language recognition, semantic information extraction, differentiated voice anonymisation, characterisation and detection of psycho-physiological states in the voice**. It is implemented through cross-cutting elements, such as the definition of a unified neural representation of speech, allowing both to work in multilingual mode and on small or poorly documented corpora, and on the preservation of personal information.

The five founding pillars

- 1 Open Science**
Promoting transparency and sharing
- 2 Ethical Applications**
Responsible AI tools, able to protect personal and sensitive information
- 3 Explicability and interpretability**
AI decisions understood by all
- 4 Pragmatism & respect of business expertise**
An AI close to the field, listening to and serving the area experts
- 5 Reliability and performance evaluation**
AI that focuses on realistic service delivery instead of commercial overselling

The last pillars establish **a research that listens to the real world** and diverges from the frequent commercial overselling in AI applications. They facilitate the implementation of language technologies by bringing the 'research laboratory' and the 'real world' closer together. They also facilitate the acceptability of AI technologies by both professionals and users, making them more trustworthy.



Shared innovation

LIAvignon promotes the development of new medium- and long-term solutions, which are essential for remaining competitive in the face of sharp international competition. It proposes an original “**multi-partner chair**” scheme promoting “**shared innovation**” by putting together the various partners. The risk-taking necessary for innovation is thus also shared. This solid union of the partners’ skills optimizes the chair’s potential for success.

The initial partnership will be further strengthened by the addition of new associate or benefactor partners. The scientific program is designed to address the common part of the research effort, leaving each partner the space and choice to develop a proprietary strategy in the market sectors that concern them.

Thanks to this “multi-partner” concept, the chair aims to conduct **a broad and ambitious research program** with expected practical benefits. It also enables partner companies to establish a privileged relationship with a team of academic and industrial researchers, to benefit from their scientific and technological expertise, to strengthen the innovation dynamic, to **promote the careers of their industrial sector** and, lastly, to facilitate the recruitment of new talents.

An ethic

The Chair is committed to paying particular attention to ethical aspects, with the **creation of an ethics committee** that will help it to choose its research themes and set its limits. Great importance is given to the **understanding of the results** rather than focusing only to performance. This results in more **respect towards the people**, whether expert, user or citizen. Throughout its work, the chair will strive to boost confidence in AI applied to language.

Five major instruments at the service of the chair's activities

A DOCTORAL PROGRAM

With a minimum of four PhDs over five years, **innovative and ambitious subjects** associated with **a careful selection of candidates at international level**, the PhD program is the flagship of the LIAvignon chair. It is complemented by theses with industrial research training agreements (CIFRE), in collaboration with the chair's partners.

A POST-DOCTORAL PROGRAM

LIAvignon is opening a post-doctoral program with an **international dimension**. A “package” facilitating the arrival and installation in Avignon is planned, to attract the best candidates.

A PRE-THESIS “ATTRACTIVENESS” PROGRAM


LIAvignon also wishes to promote the field of language processing, which is still insufficiently known to young people despite its many opportunities, and to attract the most promising to its field and its doctoral program. To this end, the chair offers a discovery program, before, during, or after the master's degree. This initiative takes the form of **apprenticeship contracts during the master's program, and internship or residency grants**.

A TECHNOLOGY WATCH & A RESOURCE CENTER

The AI chair is also **a technology watch, training and resource center**. It carries out analyses and implementations of new research developments and offers various resources and tutorials. Seminars/webinars are scheduled every quarter, with the help of students and researchers linked to the chair.

ANNUAL MEETINGS AND NETWORKING

- Organization of an annual scientific and media event of regional and international dimension, with the “partnersLIA” (the LIA partners' club). For instance, the “AI Festival” in 2019 was held with the 3IA Côte d'Azur and HumanIA of UQAM/Montreal.
- Presence of the chair at events such as the ANR WISG conference, CoFIS meetings, competitiveness clusters and specialized exhibitions.
- Participation in various local innovation networks and involvement in the promotion of the chair in its territory.

 A STRONG PARTNERSHIP				
8 FOUNDER MEMBERS A core group composed of Avignon University and seven industrial partners. Shared leadership with 50% of the votes on the Chair's board reserved for the industrial partners.	<ul style="list-style-type: none"> • Orange • Airbus D&S • Bertin IT • LNE • Validsoft • Orkis • Groupe Cerco 	ASSOCIATE MEMBERS for strengthening the chair in promising sectors.	INSTITUTIONAL MEMBERS AND BENEFACTORS to fully invest in the scientific animation and economic development of the language field and the territory of Avignon University.	DES ACCORDS DE COOPÉRATION INTERNATIONAUX for promoting the Chair and the partners' know-how and to attract new talents.

The chair holders



Jean-François Bonastre is a university professor and honorary member of the Institut Universitaire de France. A former president of the International Speech Communication Association (ISCA) and of the Association Francophone de la Communication Parlée (AFCP), he is a specialist in speech processing in general and a recognized expert in voice-based person identification. In particular, he teaches in the Master IA program, on the theme of “Explainability and interpretability in artificial intelligence”.



Corinne Fredouille is a university professor. Her research activities concern the speaker and its characterization, in the field of automatic speaker recognition (identification / verification and segmentation / clustering tasks), and in clinical phonetics. She has been a scientific leader at LIA for French research projects from 2009 to 2018, funded by the ANR or by the French Cancer Institute (INCA). She has published more than 100 articles in international/national journals / conferences.



Yannick Estève is a university professor and an expert in the field of speech and language processing. He is the director of the Avignon Computer Science Laboratory (LIA), after having directed the Computer Science Laboratory of the University of Le Mans (LIUM) and founded the Claude Chappe Computer Science Institute at Le Mans University.

***Do you want to join LIAvignon
as an associate or benefactor member ?
Please contact us !***