What are the key figures for the Inria Centre at the University of Lille?
The centre employs 320 people, including 260 scientific research staff: 120 contract staff, PhD and post-doctoral students, around fifty permanent Inria staff, including 20 research fellows or permanent staff recruited since 2020, 35 engineers and 35 nationalities. It is made up of 15 research teams, 14 of which are shared with the University of Lille, the CNRS, Centrale Lille, the Free University of Brussels and software solutions publisher Berger-Levrault, in partnership with the CRIStAL and Paul Painlevé laboratories. It is also behind 3 start-ups created in 2024: Compliance Robotics, which specialises in flexible robotics for industry, Myodev, which focuses on functional rehabilitation, and Dahu, a device that helps vulnerable people to move. These start-ups have benefited from the support of Inria Start-up Studio, which plans to increase the number of premature projects from 5 to 10 per year over the next 4 to 5 years, specifically in our local area.

How do you contribute to the regional research and innovation ecosystem?
We have developed strong synergies with the University of Lille and participate in its structuring projects, such as the Initiative of Excellence and the PUI L-VoRTEKS, through which our centre contributes its expertise to support the University in its digital strategy for the site. What’s more, we’re agile enough to quickly generate projects of different formats to explore a promising theme, such as digital health.



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Could you give us a few examples of projects in this area?
The DEFROST project team, which specialises in the control of flexible robots, is working with its partners to develop a robotic cochlear implant that can bend when inserted into the ear canal of a patient undergoing surgery. Their contribution enables real-time modelling and digital simulation of the implant's deformations. The team is also very active in the TIRREX project, one of the aims of which is to facilitate the design of robots using their digital twin, an approach that is particularly useful for modelling phantoms of organs such as the prostate, heart, etc. to improve patient monitoring and training for doctors. Other project teams are harnessing data science and AI for precision health in partnership with Lille University Hospital, the University of Lille, Inserm and the CNRS. MODAL was involved in the recent identification, in collaboration with Pr François Pattou (Lille University Hospital), of subtypes of Mash (metabolic steatohepatitis) in relation to the risk of cardiovascular disease and associated liver disease. MAGNET is involved in the Include project, which aims to build new learning models between different health data warehouses – models that respect the confidentiality of massive data without sharing it. I'd also like to mention a project on the characterisation and diagnosis of chronic inflammatory diseases based on endotyping: it is led by a hospital practitioner and researcher, in partnership with the Lille University Hospital, the University of Lille and Inserm. With our partners, we also aim to get hospital practitioners acculturated to digital technology, so that they understand the benefits and take ownership of it, without fear of being replaced.

Could you tell us about the CPER CornelIA project that you are leading?
This project aims to develop AI that is responsible for people and society. It is based on a consortium bringing together all the regional players concerned and stems from a proposal drawn up as part of the first wave of the 3IA call for projects – a proposal that focused on AI that respects people and the environment. CornelIA is

structured around 4 axes: a role as a catalyst between academic research and training players, support for businesses, a mission to interact with the public and other scientific fields, and funding for 8 platforms (6 for high-performance computing, one for robotic data and one for intelligent transport) which should give rise to a regional AI skills cluster, serving economic and scientific players. Doctoral and post-doctoral funding is also planned for work on fundamental problems: federated and distributed learning, optimisation of learning model parameters for high-performance computing and cases where data is incomplete or arrives progressively, computer vision for robotics, remotely-operated vehicles, harmonisation of parameters with contradictory objectives (confidentiality, security, fairness, data bias). All these contributions are helping to structure and strengthen the AI sector in the Hauts-de-France region.



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