ARTIFICIAL INTELLIGENCE & DATA INTELLIGENCE

After a long silent period, Artificial Intelligence (AI) is back on the scene, boosted by the technological progress done in both software and hardware areas. This revival is going to affect drastically our life and the expectations behind AI are great but research challenges are even greater.

As major actor of research and innovation, CEA Tech is highly involved in this research effort : experimenting the usages of AI to solve societal issues in domains such health, energy and transport; empowering AI by enabling edge and trustable AIs.

Firstly, edge - or embedded - AI (eAI) is a new research field on AI, which requires new hardware platform and new algorithms. Algorithms for eAI must take into account the constraints on the hardware resources, but also adapt to evanescent data.

Secondly, while AI may be involved in decision-making process, trust is a key point. Usual software engineering practices, such formal techniques and model-based software engineering, have hence to be revisited to cover AI specificities. Consequently, as major actor of innovation CEA Tech is investing in doing research in these two domains, edge AIs and trustable AIs.

WHY A PHD RELATED TO ARTIFICIAL INTELLIGENCE & DATA INTELLIGENCE AT CEA TECH?

CEA Tech mission is to foster research transition into innovations for solving societal issues considering ethical guidelines. In that context, CEA Tech experiments and push Artificial Intelligence in many applications domains such as healthcare, telecom, photonic, manufacturing, robotics, computer vision, energy and autonomous transport. In each domain, our research groups gather experts of the field but also researchers and engineers from other horizons (e.g., semiconductor technology, sensors or hardware design, software engineering, and model-based engineering) in order to innovate in a transversal way. AI makes no exception, and many teams are investigating AI techniques applied to their domain specific research fields.

A PhD student in any of these teams has the insurance not only to become an expert in AI but also learn much more outside the sole AI field. PhD students are also in direct contact with real problems to solve and involved with CEA Tech engineers and researchers in concrete projects raised by industry.

CEA Tech is building next generations of AI hardware and software platforms, especially for edge embedded AI and trustable AI. A PhD working on this topic at CEA Tech will develop new AI techniques, will be engaged in multi-disciplinary team, will be involved in exiting projects working on societal challenges, and will be embedded in international teams.

📍 CEA-List Institute in Paris Saclay or CEA-Leti Institute in Grenoble Alpes

👥 40 ongoing PhD projects

CEATECH SCIENTIFIC AND TECHNOGICAL CHALLENGES

CEA Tech tackles the three key and ongoing transitions of the 21st century: numeric, energy and medical ones. For each, CEA Tech research teams innovates within a vibrant network of academic and industrial partnerships, to develop the technologies of the future.

CEA Tech, one of the four CEA research divisions, relies on three large research Institutes, two in Grenoble, Leti and Liten and one in Saclay, List, and a network of technology transfer facilities in Bordeaux, Nantes, Toulouse, Metz, Cadarache and Lille.

Close to 500 young researchers, prepare their PhD in CEA Tech Labs, with a major contribution to the research teams. They share the successes of the CEA, embodied in leading publications, patents, technology transfers to industry, business and start up creation. For years, Reuters ranks CEA as one of the top three most innovative research organizations in the world (1st, 2nd or 3rd).

WHY A PHD AT CEA TECH?

Regardless of the field of research you are looking for, willing to explore prospective ideas or to further advanced technologie, you will likely find among CEA Tech doctoral positions the one that meets your expectations.

Then you can join either Leti (1800 p.) and focus on micro and nanotechnologies, embedded electronics, communications, components for the Internet of Things (IOT), cybersecurity, medical devices and healthcare outpatients (at Clinatec) - or Liten (950 p.) to face the challenges of non-CO_2 emitting energies (solar, batteries, hydrogen, biomass or smart grids) - or List (750 p.) to innovate in terms of data intelligence, cybersecurity and IOT software, manufacturing (4.0 industries), radiotherapy, health data processing - or a research team located in one of the technology transfer facilities (Bordeaux, Nantes, Toulouse, Metz, Cadarache and Lille).

Whatever the topic you select, whatever the career path you envision, joining CEA Tech for your PhD has a deep meaning. On the one hand, you will be dealing with one major societal challenge, deeply rooted in science and technology. On the other hand, your PhD will be at the heart of highly innovative ecosystems, each offering unique opportunities in research and career paths.

Indeed, CEA Tech offers a highly efficient mix of digital and hardware skills, world-class facilities such as state-of-the-art 300 mm clean rooms, and integration facilities for hydrogen and battery technologies, and many others. CEA Tech's teams form active partnerships with other research organizations and universities, as well as active cooperation with more than 500 industrial partners in France, Europe, North America and Asia.

We will do our best to accompany your success.

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