

Challenges
proposed by



BACKGROUND

connects
science meets business



Almirall is a global company dedicated to skin health, founded in 1944 and headquartered in Barcelona, Spain. Our noble purpose is at the heart of our work: “Transform the patients' world” by helping them realize their hopes and dreams for a healthy life. Through pharmaceutical innovation, investment in R&D and a firm commitment to healthcare alliances and partnerships worldwide, we develop and commercialise solutions focused specifically on dermatological diseases.

AREAS OF INTEREST

Applied Computing & Computer Science

LIFE SCIENCES

DATA & ANALYTICS

ARTIFICIAL INTELLIGENCE

Aina

 **Generalitat
de Catalunya**

CHALLENGE 1



TITLE Transfer learning framework that adapts oncology-trained neural networks to dermatology applications

DESCRIPTION The success of large-scale AI models in oncology has created an unprecedented opportunity to accelerate innovation in dermatology. These foundation models, trained on vast collections of genomic, transcriptomic, histopathological, imaging, and clinical data, have learned rich biological representations that capture fundamental processes such as immune activation, tissue remodeling, fibrosis, and cellular differentiation. Many of these mechanisms are also central to immune-mediated skin diseases.

This challenge proposes the development of a transfer learning framework that adapts oncology-trained neural networks to dermatology applications, enabling the reuse of biological and imaging knowledge acquired from millions of cancer samples. The resulting platform will establish a scalable and reusable AI infrastructure for precision dermatology, reducing data requirements, accelerating discovery, and supporting the development of next-generation therapies for dermatological diseases.



CHALLENGE 2



almirall

TITLE

Design and development of skin imaging sensors

DESCRIPTION

Almirall faces the challenge of developing advanced imaging sensors capable of non-invasively measuring the key physiological and structural properties of human skin.

By integrating, among other things, multispectral imaging, thermal sensors and skin mapping, the sensors will enable accurate assessment of parameters such as hydration, pigmentation, elasticity and vascularisation.

The technology is designed to support dermatological research, personalised skin care and clinical diagnosis, offering a scalable platform for real-time skin analysis across diverse settings and populations.



CHALLENGE 3



TITLE Marketplace centralising access to biological samples and disease models

DESCRIPTION

Data generation is a challenge for modern pharmaceutical research. To our knowledge, there is no centralised research marketplace tailored to the pharmaceutical industry and designed to streamline access to providers of biological samples and animal disease models.

The platform should enable direct interaction between pharmaceutical companies and providers of live specimens, tissue samples and digital molecular data, allowing faster and more transparent collaboration.

By consolidating fragmented sourcing channels into a single, searchable interface, the marketplace will accelerate preclinical research, improve traceability and support regulatory compliance across global biomedical ecosystems.





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