

Industrial design began with form-giving for mass-produced products. Its role has since expanded to creating products, services and systems in both tangible and intangible forms, based on insights into the human, technology and business. ID KAIST (Industrial Design Department, KAIST) was the first design department to be established at a university of science and technology in S. Korea. It is a successful model of a systemic approach to design education, research and university-industry collaboration. We produce design experts with an understanding of science and technology. We explore creative application of science and technology with people-centred approaches. We focus on creating design solutions integrated with discovering new problems, ensuring business viability and technical feasibility, and satisfying people's needs. To this end, we carry out research into empirical cases, theories, principles, methodology and tools.

■ **Research areas and activities**

The members of ID KAIST are leading design professionals and researchers who are creating new user experiences through their understanding of cutting-edge technology and the ability to identify user needs and initiate business innovation. They contribute in diverse areas through mindsets and methods that allow them to view problems, (re)frame them, and deal with ambiguity in systematic ways. Research Labs are grouped by three areas: Human-Centered Design, New Technology Convergence, and Business Innovation.

- The Human-Centered Design group emphasizes the human perspective of understanding, thinking and solving the design problem. The related labs are in the following:
 - Creative Interaction Design Lab
 - Color Lab
 - Next Interface Lab
 - Data, Interaction, Design Lab
 - Affective Systems and Cognition Lab
 - Move Lab
 - Experience Design Lab
- New Technology Convergence group focuses on integrating new technology into the problem-solving process of design issues and proposing novel solutions. The related labs are in the following:
 - Co.design:Inter.action Design Design Research Lab
 - Wonder Lab
 - Sketch Lab
 - MAKinteract Lab
 - AI Experience Lab
- Business Innovation group pursues business opportunities of creative thinking and design outputs, and the related labs are in the following:
 - ID+IM Lab
 - Designize Lab

■ The 14 Laboratories in three groups:

- HUMAN-CENTERED DESIGN

□ Creative Interaction Design Lab (CIxD Lab): Prof. Youn-kyung Lim
Creative and quality-centered design, Experience-centered design, Prototyping & Interactive systems design

We are exploring various design approaches and possibilities in the advent of new digital and computational technologies. In particular, we are currently focusing on the following topics. 1) Redefining UX (User Experience) design concept and theory as we face with the 4th Industrial Revolution era, 2) developing human-centered research methods and tools for creative interaction design, and 3) developing new concepts of interaction design approaches and theories under the new technology development. In our research activities overall, we particularly emphasize how design can promote quality of human life, experience, values, and enhancement of human potential.

□ Color lab: Prof. Hyeon-Jeong Suk
Color psychology, Emotional lighting, Human Factors

Prof. Suk explores the value of light and color human experiences. Color psychology and keen sense about emotional design are the fundamental roots of its study, and further aim to form a greater convergence with diverse fields.

□ Next interface lab: Prof. Sangsu Lee
UI, UX, User-centered design, HCI

We, Next Interface Lab, study more natural and human-centered future interfaces for everyone. We focus on practical design research in the field of user interface design that bridges the gap between academic research and practice. Next Interface Lab is a part of NH Investment & Security - KAIST UX Design Research Center.

□ Data, Interaction, Design Lab: Prof. Hwajung Hong
HCI, AI Digital Health

We explore design from, with, and by data to develop technologies that are more sensitive to human concerns and behaviors. Our research aims to build a more inclusive society by understanding the social impact of data and AI and by making technology accessible and accountable. Our current projects are developing human-centered and participatory approaches to designing algorithmic systems that are transparent, reliable, and responsive to community values and needs.

□ Affective Systems and Cognition Lab: Prof. Chang Hee Lee
Future, Sense, Wellbeing

The ASC (Affective Systems and Cognition) lab at KAIST explores the future of our senses and well-being. To investigate this, the lab studies qualitative phenomena, roles of materials/materiality, play, human-machine interaction methods, post-human, and data representations. The lab develops radical tools, devices, and products to promote new knowledge through progressive thinking. We imagine and create possible futures for our senses to promote well-being and inspire the present human society.

□ Move Lab : Prof. Hyunjoon Park
Future Mobility Design/Tools, Human Centered Design, Brand Design DNA/Strategy

At Move lab we focus on helping people move better. We view mobility devices as tools for

connection, highlighted in meaningful human relationships as well as machine to machine interactions. We don't stay within the boundary of traditional transportation design. Neither do we mindlessly follow clichéd notion of future mobility systems of late. Our goal is to create 'stories that move' – to help us once again imagine like a child, to make a difference in where it really counts, and to help people move above and beyond what they've ever dreamed of. We create innovative mobility solutions, authentic brand design DNAs and intuitive mobility design tools.

☐ Experience Design Lab : Prof. Yiyun Kang

Experience Design, Immersive Storytelling, Art and Technology, Extended Reality, Creativity, Criticality, Communication

Experience Design (ED) Lab conducts research and practice located at the intersection of art and technology. The lab explores multi-sensorial, tech-aided environments in extended realities to investigate immersive storytelling. Through experience design research, we aim to develop innovative content that promotes informative and affective communication.

• New Technology Convergence

☐ Co.design:Inter.action Design Research Lab: Prof. Tek-Jin Nam

Augmented Design, Interactive Product and System Design, Interaction Design

Prof. Nam conducts design research and practice in the area of co-design and Interaction, hoping to be a knowledge base for the future of design and design of the future.

☐ Wonder Lab: Prof. Woohun Lee

Interaction design, UX design, New media design

We humanize technology and create delightful user experiences through experimental ways which blur traditional boundaries between design, art, and engineering. Our research focuses on how new technologies can be used to change people's play and learning activities. We design new products, media contents to enable these changes.

☐ Sketch Lab: Prof. Seok-Hyung Bae

Sketch, Design, Metaverse

SketchLab envisions the innovation of design processes through the application of advanced digital technologies. It focuses on: 1) analyzing designers' way of ideation, presentation, and collaboration; 2) developing novel interaction techniques and systems for design activities; 3) proposing new paradigms for design practice and design education.

☐ MAKinteract Lab : Prof. Andrea Bianchi

Human computer interaction, Digital Fabrication, Mixed Reality, Human Augmentation, UX Hardware, Physical Computing

MAKinteract (MAKE + interaction) is a research lab specializing in Hardware UX, in the field of Human-Computer Interaction (HCI), and working at the intersection of design and engineering. Rooted in user-centered experience design, and with deep understanding and expertise in various

engineering fields (computing, mechanical engineering, fabrication, electronics), we explore emerging technologies in the areas of personal hardware, such as novel tools for electronics, fabrication, metaverse, and haptic augmentation.

☐ AI Experience Lab: Prof. Tak Yeon Lee
Human-AI Interaction, Data-Centric Design, Immersive Medium

We create innovation solutions for real-world problems by integrating the power of design, data, and cutting-edge technology. Our research focuses on (but not limited to) creating a symbiotic environment where human, VR/AR/XR technology, and AI collaboratively solve challenging problems.

- Business & Social Innovation

☐ ID + IM lab : Prof. Sangmin Bae
Philanthropy Design, Product Design, Industrial Design

ID+IM is award-winning multi-disciplinary product design laboratory, founded by Prof. Sangmin Bae in 2005. ID+IM is an abbreviation for 'I dream / design / donate, Therefore I am' which is from Rene Descartes' famous quote 'I think, therefore I am' and also stands for our design directions towards Innovative Design, Intuitive Design, and Interactive Design as well. We conduct "nanum project", which is a charity project by designing and selling innovative products to donate all profits. Also, we have "seed project" which is designing for the 3rd world by using appropriate technology. Finally, we conduct "CSV(creating shared value) project" to create values that can be shared by companies, customers, and society through collaboration with various companies.

☐ Designize Lab. : Prof. Ki-Young Nam
Design Strategy, Design Thinking, Service Design, Social Impact, Policy Design, Civic Engagement, Local Revitalization

Bringing design values to areas within and beyond design. Designize lab strives for the strategic utilization of design, beyond the traditional boundaries of design management. Our research projects aim to 'designize' various realms of social innovation such as civic engagement, policy making, or community design.