Kanagawa Institute of Technology
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Training Themes for the 2026 KAIT Laboratory

Internship Program

Organizers and Contacts:
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KAIT_INTERNATIONAL

Philosophy and objectives:
Through research themes in your assigned laboratories, lectures, laboratory visits, and tours of science and technology facilities, exchange students from our partner universities will have opportunities to learn about information, engineering, and science and technology. In addition, cultural activities and community engagement will help you deepen your understanding of Japanese culture and society.

By fostering interaction among faculty members and students of our university and partner institutions, we aim to strengthen mutual trust between the universities. Furthermore, by taking advantage of the fact that this program is conducted with renowned partner universities in each country, we will contribute to the local community through activities such as high school visits, while also promoting the globalization of our university.

For KAIT students as well, we actively encourage exchanges with visiting students from partner universities, nurturing the global sensibility and competencies necessary for intercultural communication.

Training themes:

Theme ID	**1**
Theme title	Robot control system based on human gestures
Supervisor (s)	KAWARAZAKI Noriyuki
Available months	1st period: May-August / 2nd period: September-December / 3rd period: January-March
Course overview	Our research targets are human robot interaction systems using image processing or voice recognition. For example, we developed the human following mobile robot based on the image recognition. In this program, students will learn about the image processing software (Open-CV) and the robot control program (ROS). Finally, students will able to create the robot control system based on human gestures.

Theme ID	**2**
Theme title	Advanced 3D and VR Gaming
Supervisor (s)	Assoc. prof. BRANDSE Michael and Prof. SAKAI Masahiro
Available months	1st period: May-August / 3rd period: January-March
Course overview	In this course, we will develop advanced 3D or VR games. Here, “advanced” refers to games that incorporate cutting-edge technologies and techniques. For example, in Unity this may include shader programming, AI implementation, and integration with external devices such as gadgets and other hardware. For VR games, our lab can connect Quest headsets to external walking devices, enabling more immersive experiences. We also aim to explore game development using unconventional input methods. Specifically, students can study original UI/input approaches such as integrating the game environment with LLMs and implementing AI-based pathfinding.

Theme ID	**3**
Theme title	Multimodal Reasoning AI Systems
Supervisor (s)	Prof. TAKANO Kosuke
Available months	1st period: May-August / 2nd period: September-December / 3rd period: January-March
Course overview	This course explores the design and development of multimodal reasoning AI systems, including emotional AI, conversational AI, and observation AI. These systems are designed to perform reasoning based on internal cognitive and emotional states while interacting with humans and their environments. Students will study computational models of perception, dialogue, and emotion, and implement AI systems capable of human-centered reasoning and communication. Through project-based learning, participants will design interactive AI systems that integrate perception, internal state modeling, and reasoning mechanisms for real-world applications using LLMs and the Transformer architecture. The framework is also applicable to observation-based knowledge acquisition systems that analyze and understand complex environments through multimodal sensory data. Website: https://dolphin.mkm.ic.kanagawa-it.ac.jp/takanolab

Theme ID	**4**
Theme title	Introduction to Experimental Biotechnology
Supervisor (s)	Prof. IIDA Yasuhiro
Available months	2nd period: September-December / 3rd period: January-March
Course overview	This course provides an introductory, hands-on experience in experimental biotechnology, designed for students from a wide range of academic backgrounds. Students will begin by learning the fundamental concepts and basic laboratory techniques of biotechnology, including genetic recombination, DNA electrophoresis, and enzyme activity assays. They will also gain practical experience in culturing microorganisms and animal cells. Using these foundational techniques, students will conduct exploratory experiments to evaluate biologically active compounds derived from medicinal plants, focusing on activities such as anti-tumor and anti-aging effects. Through these experiments, participants will develop practical laboratory skills and a basic understanding of how biotechnology is applied in research and industry.

Theme ID	5
Theme title	Machine Learning and Human Robot Interaction for Health Care
Supervisor (s)	Prof. SAEGUSA Ryo
Available months (受入れ月)	1st period: May-August / 2nd period: September-December / 3rd period: January-March * 30 days – 90 days for each period
Course overview	Evolution of intelligence is a dream of human spices. In our internship program, we will engage a course to build up new ideas using physical platforms to realize "robot training by human" and "human training by robots" aiming in medical and welfare applications. Throughout experiences to deal with our original robotic platforms, participants will learn skills to implement physical AI systems in C++/Python on Linux for making robots behave autonomously. Participants might then discover essential cues to evolve intelligence of both humans and machines. The keywords related to our internship program are Machine learning, Image recognition, Audio processing, Localization, Manipulation, Rehabilitation for human's Dining, Walking, Talking, Gazing and etc. For the further information on the research topics and past participants, see the following online pages: 