

Division of Electrical Engineering and Computer Science	Research field	Genome informatics	Lab. ID EC26
Laboratory web site	http://gie.ec.t.kanazawa-u.ac.jp/		
Research subjects			
In 2003, the six countries, the U.S., the U.K., Japan, France, Germany, and China, announced completion of the Human Genome Project. It is expected that this success will enable us to elucidate the function of approximately 20,000 genes in the human genome and develop drugs for the treatment of diseases. After the completion of the Human Genome Project, large-scale genetic engineering experiments for human genes have begun to elucidate biological mechanisms and develop medicine. Because of this, computer analysis of the enormous experimental data obtained from large-scale genetic engineering experiments is essential. Therefore, we have conducted various gene studies through a large-scale molecular biological experiments and computer analyses.			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
Students read a text book in a programming language in turn, and answer an end-of-chapter question. Moreover, students read English papers for their research to give an explanation of their contents at laboratory meetings. They also report the progress in their research.			
Daily life in the laboratory, etc.			
Students can choose their own research themes according to their interest. They can also borrow a personal computer and use it freely in our laboratory. Server computers are also in our laboratory, because statistical calculations often require large amounts of memory and a long period of time. There are also laboratory equipments to perform genetic engineering. In addition, various events will be held jointly with other laboratories.			
Message or comments by the laboratory faculty staffs			
The students who go on to the master's program will become a teaching assistant for undergraduate practice education. While most graduates have an employment in electrical and electronic or IT companies, some graduates find a job in the civil service and banking.			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2021.3	Estimation of mutations related to onset and malignancy of mouse colorectal cancer.		
2021.3	Impact of sequence-dependent DNA methylation on disease susceptibility differences between mouse subspecies.		
2019.3	Inference of sequence-dependent subspecies-specific DNA methylation underlying gene expression differences between mouse subspecies		
2017.3	Identification of allele-specific methylation regions from NGS data		
2017.3	Identification of mouse substrain-specific epigenome		
2017.3	Improvement of a gene set analysis method to identify differentially expressed gene sets		
2016.3	Function prediction of transcription factors using histone acetylation patterns		
2015.3	Elucidation of the function of MAP kinase scaffold proteins, JSAP1 and JLP by gene expression analysis		
2014.3	Improvement for an identification method of differentially expressed gene sets and its accuracy verification		
2014.3	Presumption of pleiotropic genes using gene networks		
2013.3	Validation of MIMGO: a method to identify differentially expressed GO terms in a microarray dataset		
Recent Doctoral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
Laboratory mail address	Yoichi Yamada <yoichi *at* t.kanazawa-u.ac.jp>		