Title	"Let's take a ride" is my usual response when invited into something positive. This forward-looking attitude has helped me expand my horizons.
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Associate Professor Ryogo Kubo

"Let's take a ride" is my usual response when invited into something positive. This forward-looking attitude has helped me expand my horizons.

Dr. Kubo, who used to be a music-loving boy, is now strongly emerging in his career as a researcher in the field of electronics. Although themes of his study changed from college days and the years with NTT, his style of research based on fusion of diverse fields, just like various instruments striking a melodious harmony in an orchestra, seems to remain unchanged. Behind his choice of research themes, there has always been an aspiration to connect himself to as many people and things as possible.

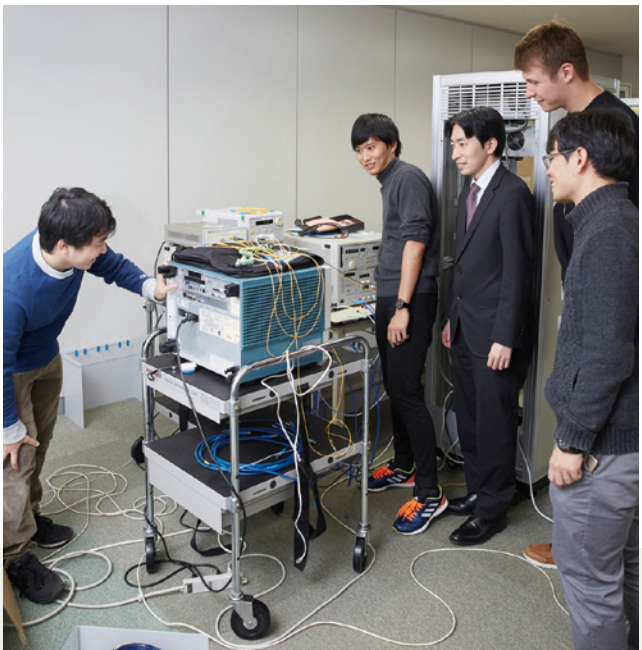
What was your childhood like?

I was born in a family of five – father, mother, grandfather, aunt and myself. As a child I learned the piano under the strong influence of my mother who was a piano instructor. Also due to her influence, I loved classical music, of which the symphony "From the New World" was my favorite. As an elementary school boy, I belonged to the school's chorus club and had the valuable experience of participating in the preliminary music contest sponsored by NHK (Japan Broadcasting Corporation).

When it came to classroom subjects, I was fond of science and social studies. I also liked to enjoy time with friends just like an ordinary schoolboy, playing TV games, outdoor sports and the like.

You say a home stay overseas in your high school days was an unforgettable memory, is that right?

When I was an elementary school fifth grader, I began to attend a cram school four to five days a week. Thanks to the cram school, I was able to pass the entrance examination for the Shiba integrated junior and senior high school. One of the most impressive memories of those days is a two-week visit to New Zealand that I had as a senior high school first grader on a short-term student exchange program. As my first ever visit overseas, basic English was all I could speak. But I could somehow communicate with local people, which was an exciting experience for me. I also remember enjoying a traditional dance performance by Maori and a typical New Zealand dish of green peas and ram. It was around this time that I became interested in foreign languages and cultures.



Why did you choose science and technology instead of music or foreign language?

Perhaps, it was mainly because of my father's influence, who was an employee of a manufacturing company. At the Shiba High School that I attended, many of my classmates chose that course, so I didn't hesitate to go that way. I was admitted to Keio University Faculty of Science and Technology.

Yet, it didn't mean I had lost my interest in music and foreign languages. Even after joining Keio, I continued to pursue music-related activities energetically, such as by belonging to the Keio Mandolin Orchestra (as a percussionist) and setting up a new orchestra together with my friends from in and outside of Keio. As this new orchestra had many horizontal connections, many joined it from other universities to eventually become a 50-member orchestra. In addition to holding our own regular concerts, we also took part in other university's campus festival by joining in orchestral accompaniment for an opera, which was truly enjoyable.

As for foreign languages, I chose German as my second foreign language and even took Russian and Italian language classes under general curriculum.

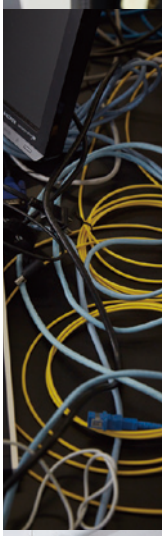
In retrospect, while enjoying music and foreign languages for pure enjoyment, I may have felt something of scientific fun in musical chords and grammatical laws of languages.

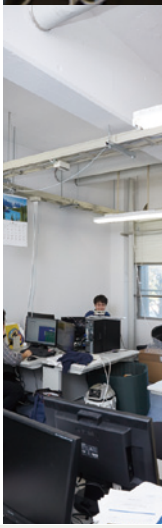
What did you learn at Keio Faculty of Science and Technology?

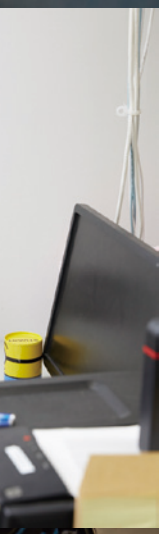
As sophomores, we students were asked what department to choose, and I chose the Department of System Design Engineering. There was a reason for it. Although I entered Keio initially opting for "Learning Gate 4" (Mechanics), later I became increasingly interested in electrical engineering and wanted to learn studies based on fusion of the two disciplines. So I joined Prof. Kouhei Ohnishi's lab to pursue robot control. To be more specific, I studied how to remotely transmit the feel of a robot arm when it touches an object. It was an important study because this technology would be vitally needed to control fine movements of surgical robots. Not only did I learn from Prof. Ohnishi a lot about control and robotics, but I also learned the basic attitude researchers like us must acquire in approaching the essence of things.

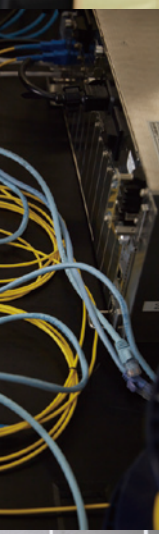
After that, you joined NTT for a few years, right?

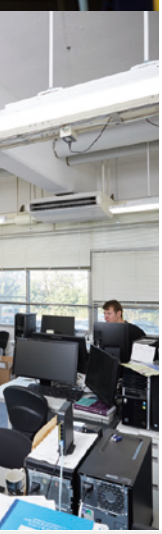
From around when I belonged to the lab as a senior, I began to feel a vague yearning for a researcher's career burgeoning











in myself. This was also when I was engaging in research into a remote control robot. So, I began to find "network control" – the theme leading to my current research subject – interesting. I decided to find employment with a business upon completion of my master's course. NTT was the company I chose because I thought it would allow me to pursue research into network technology. At the NTT lab, I did research on optical communication networks.

As part of the NTT lab first-year member training program, there was a system requesting, immediately after entering the company, newcomers like myself to set a theme and advance research on their own. After consulting an advisor, I came up with a number of themes, of which I finally chose the development of an energy-efficient optical communication network. It was because I felt energy problems becoming closer to me while I was engaging in the study of controlling motors and other electric appliances at Keio. At the beginning there was some criticism, saying that energy-saving wouldn't be necessary given that the optical communication network was developed as an energy-efficient system by its nature. But my point was that if the optical network prevails among countless households and the number of devices skyrockets, energy-saving effects would be enormous. My idea was accepted and the research project started. I made my proposed prototype system, conducted experiments on it and then made a proposition for standardization. I found my research efforts rewarding as the project began to produce positive results.

It was just about that time that I, now with a doctor's degree as a company employee, received an offer to return to Keio. Interested in a position in education as well as a researcher's career not to mention, I took advantage of the offer to return to Keio. Coming to the Keio Department of Electronics and Electrical Engineering, I'm now making the most of my specialties – system control and communication network – as the basis to realize a smart infrastructure system enabled by integrated control of diverse systems including those of electric power, communications, mechanics and even human behavior.

To conclude this interview, please tell us how you find Keio University, your alma mater.

Looking back at my life up to now, I can say human relationships that I enjoyed have been extremely valuable. For example, I joined the mandolin orchestra only because I happened to be hailed during a campaign for inviting newbies. There are also many research themes that I took up, inspired by participants whom I met in academic meetings. Of course there are many things I initiated on my own, but that alone couldn't have expanded my horizons this much, I'm sure. This attitude of mine may sometimes appear passive, but inspirations coming from others often proved to be good as they motivated me to meet new challenges that I wouldn't have taken up otherwise. I can make good use of such suggestions to create my own original ideas. Therefore, I'm trying to keep a forward-looking attitude, always open to any positive suggestions and offers.

In this sense, Keio University has many students with diverse backgrounds, making it an ideal place to learn. Some are so-called "inner students" who came from Keio Yochisha Elementary School and up while others joined Keio through the university entrance exam. Also, there are many students who have overseas experiences. This diversity of students makes Keio just like Keio. Speaking of labs, too, members with varied ways of thinking and personalities can make their labs much more resourceful. This holds good especially when it comes to the study of electronics that concerns the real world.

◎ Some words from students . . . ◎

● I'm studying cyber security and flight control of unmanned aerial vehicles (UAVs). The study of UAVs inevitably involves mechanical aspects because we actually fly a drone. Although there have been few precedents of mechanics-related research at the Kubo lab, I asked Dr. Kubo to give priority to my challenge. When I was an undergraduate senior, I had the privilege of receiving Dr. Kubo's attentive, detailed guidance for my research. Now in the second year of master's course, I'm basically free to choose research themes, occasionally receiving his advice as needed.

(Reporter & text writer : Akiko Ikedaa)

For the full text of this interview
http://www.st.keio.ac.jp/kyurizukai

There are always some unrefined or rough aspects behind research works that aim for smartness. I'd like you to enjoy such unrefined aspects.

Ryogo Kubo

Born in Tokyo, Dr. Kubo specializes in system electronics, especially focusing on fusion of communication network and system control technologies. He received his B.E. degree in system design engineering and his M.E. and Ph.D. degrees in integrated design engineering from Keio University, Japan, in 2005, 2007 and 2009, respectively. In 2007, he joined the NTT Access Network Service Systems Laboratories, NTT Corporation, Japan. Since 2010, he has been with Keio University, Japan, where he is currently an Associate Professor at the Department of Electronics and Electrical Engineering.