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## Passion for computers and virtual reality

Dr. Sugimoto says that during his childhood he did not have a TV set at home. It may have been his counteraction to such a home environment that he became crazy about computers as a junior high school student. His devotion to computers continued to grow so much so that he came into a spotlight as a major player in inter-college virtual reality contests during his college days. His current hobby is the creation of CG design, indicating his endless enthusiasm for computers. In Dr. Sugimoto's lifestyle, virtually no gap can be seen between his likes and professional research work, with which his students seem to empathize. His lab is always full of students' vigor.

### We heard that you are from Iida City, Nagano Prefecture. What was your childhood like back then?

Both of my parents graduated from universities of fine arts, and they were working in the same industrial design firm in Tokyo. One day, they were compelled to enjoy a self-sufficient life in the countryside and moved from Tokyo to Nagano. Thanks to their education policy of raising a child unrestrictedly in an environment of superb nature, I had lived a life without TV up to the age of elementary school upper grades. Indeed, as a small boy I spent everyday running about fields and hills.

Perhaps as retaliation to the life without TV, I came to take a special interest in computers when I was a junior high student. Toward the end of elementary school, I encountered computers for the first time in life when I visited the home of my cousin. There I found and touched an MSX, a computer for beginners. Since then, even before owning a computer of my own, I bought a computer magazine every month and was absorbed in reading

them.

It was after I went to high school that I actually got a personal computer of my own. It was a high school admission congratulatory present from my father, who became unable to let my computer fever pass unnoticed.

After I obtained my own computer, I became even more fascinated by informatics so much so that a technical book on lossless compression became my favorite reading during my high school days. By the way, I still cherish the memorable computer that my father bought me.

### What made you decide to choose a researcher's career?

As an undergraduate freshman, I took part in the International Collegiate Virtual Reality Contest (IVRC), an event presided over by the then University of Tokyo Professor Susumu Tachi (now Special Research Professor of Keio University, and Professor Emeritus of the University of Tokyo). This turned out to be the first opportunity for me to think about a career as a researcher.

The seniors in the circle that I joined upon university admission were the contest winner for the preceding year, whom I aroused my interest.

My first production as a freshman was a tele-existence system that creates a sense of self-projection to a target object placed in a water tank. Though it was the first ever challenge for me, we were honored with an encouragement award of The Virtual Reality Society of Japan. From the second year on, we also made entries with the help of many friends as well as a professor who became the supervisor of my graduation thesis. In the third year, our team created a system that allowed one to walk around freely inside a computer memory unit's folder structure expressed as a 3D environment. This system won both the encouragement award and technical award.

Through entries in this contest, I was blessed with opportunities to work with front-line researchers, such as Professor Taro Maeda and Professor Hideyuki Ando (both currently at Osaka University) who became colleagues after completion of my master's course, and Professor Masahiko Inami (now at Keio University) who was my mentor of my doctoral course. It was a truly valuable experience, awakening me to the excitement of studies.

### You are now involved in IVRC administration, aren't you?

I turned to the event's administrative side when I was a senior, and now I'm supporting it as an executive committee member.

### Fig.3 Hinode (Solar-B) satellite

The "Hinode" or Solar-B is a solar observation satellite launched by the Japan Aerospace Exploration Agency (JAXA) in 2006. Boasting a full range of onboard equipment, such as a solar optical telescope, an X-ray



telescope and an extreme-ultraviolet imaging spectrometer, Hinode is capable of highly accurate observation of magnetic fields, temperatures and plasma of the solar surface and the gaseous envelope outside the solar chromospheres (corona). The CG shown here is a work by Dr. Sugimoto.

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I also had the experience of designing the IVRC webpage though I'm not responsible for it now. I undertook the webpage design because I enjoy CG design as a hobby and to get away from research work. During my student days, I even spent my living expenses worth several months to buy very expensive 3D CG software. Back in those days, it was a decision as desperate as making a leap in the dark. I am very envious of today's students because at educational institutions today, it is possible for students to take advantage of a variety of highly functional software programs for free.

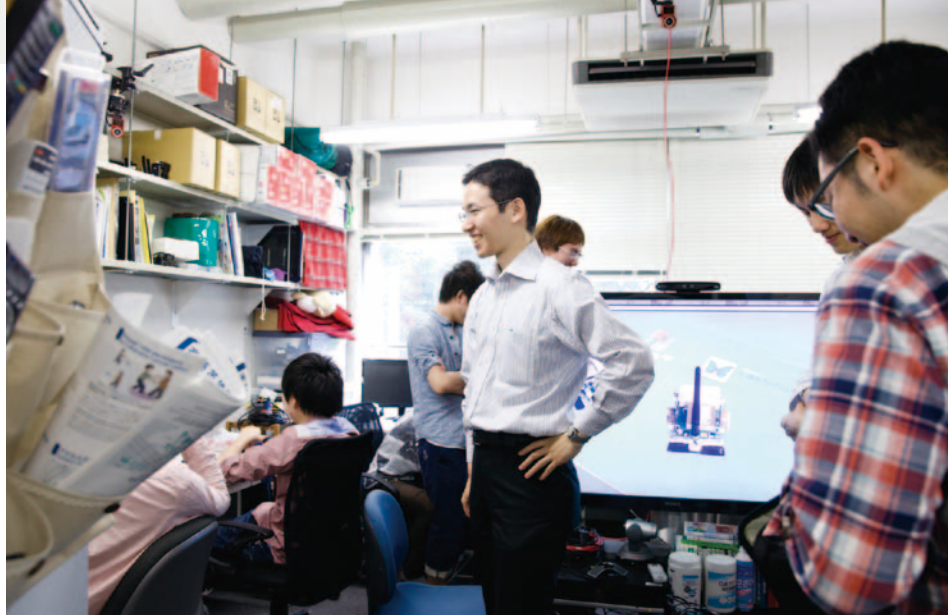
The other day, I happened to find in NASA's website a CG model of the "Hinode" (Solar-B) satellite that I created for the National Astronomical Observatory of Japan when I was a doctoral student. I am very happy to see my own CG works being enjoyed and used by many people.

Recently, my lab introduced a "3D printer" (3D shaping equipment) as an application of CG design. It is capable of making fixtures for devices that we use for research on the spot by designing CG models. I'm extremely delighted that my hobby of CG design is actually useful in our studies.

Of course, not everything in my life, whether it is my research or pastime, revolves around a computer. Since three or four years ago, our team of researchers has been making entry in "Eco-Run" – an auto event in which participating light vehicles run on the Fuji Speedway racing course. At my home, I have a home theater of 130-inch LCD projector, with which I view SF movies and animations from time to time. Being so much attracted to such visual entertainment is perhaps retaliation to my childhood that I spent without TV (laughter).

#### Currently how many students does your lab have?

A total of ten – four undergraduate and six graduate students. They are all gentle, positive, and well brought up. Indeed, they are



really worth teaching.

But it should be kept in mind that students could hardly learn what they are taught at classes if they remained passive. This is why I'd like my students to take up any hobby related to their interested fields and put it in practice as "their own challenge." Especially when it comes to the field of informatics, you are able to shape your own ideas readily with only a computer and sufficient enthusiasm. I sincerely hope that students will enjoy a meaningful student life by beginning with their interests.

#### ◎ Just a word from a student . . . ◎

● Whenever we students approach Prof. Sugimoto for consultation, he responds to us with very kind advice, putting himself in our shoes. Our lab is always has a friendly atmosphere, so we can communicate very frankly with each other.

(Reporter & text writer : Madoka Tainaka)

For the full text of this interview

<http://www.st.keio.ac.jp/kyurizukai>

**I'd like my students to take up any hobby related to their interested fields and put it in practice as "their own challenge."**

## Maki Sugimoto

Dr. Sugimoto graduated from Iida High School in Nagano Prefecture, Japan. He received his Doctor of Philosophy in Engineering from The University of Electro-Communications. He was a visiting researcher of NTT Communication Science Laboratories, a research fellow of the Japan Society for the Promotion of Science, and a visiting scholar of MIT Computer Science and Artificial Intelligence Laboratory. He became a senior assistant professor in Graduate School of Media Design, Keio University in 2008. In 2011, he assumed the current position as an assistant professor in Department of Information and Computer Science, Faculty of Science and Technology, Keio University.

