慶應義塾大学学術情報リポジトリ
Keio Associated Repository of Academic resouces

Title	Editor's postscript
Sub Title	
Author	松林, 真奈美(Matsubayashi, Manami)
Publisher	Faculty of Science and Technology, Keio University
Publication year	2015
Jtitle	New Kyurizukai No.20 (2015. 10)
JaLC DOI	
Abstract	
Notes	
Genre	Article
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001003-00000020-0010

慶應義塾大学学術情報リポジトリ(KOARA)に掲載されているコンテンツの著作権は、それぞれの著作者、学会または出版社/発行者に帰属し、その権利は著作権法によって保護されています。引用にあたっては、著作権法を遵守してご利用ください。

The copyrights of content available on the KeiO Associated Repository of Academic resources (KOARA) belong to the respective authors, academic societies, or publishers/issuers, and these rights are protected by the Japanese Copyright Act. When quoting the content, please follow the Japanese copyright act.

Key elements required of research

Masahiro Yukawa

I think research must have "Sexiness" and "Elaborateness" as key elements. "Sexiness" can be translated as "attractiven-ess." In fact, we are excited by innovative research themes with an element of surprise. Developing a highly creative idea and doing something trail-blazing no one else would conceive – I think maintaining this mindset is very important. However, this alone is not enough. Once you have got a stimulating idea, you must verify whether it will be feasible or not. An important requirement here is "Elaborateness." Conducting experiments in an easygoing way and saying "Look at this result. It's a success, isn't it?" … It will bring you nowhere. Given today's highly competitive world, it's unlikely that researchers in any country will accept what you say.

When it comes to signal processing, verification is made by mathematical proofs and computer simulations. Speaking of myself, convex analysis (particularly fixed-point approximation of nonexpansive mapping) helps me a lot when developing rigorous discussions. So far I have addressed many, diverse research tasks. In all of these cases, convex analysis well demonstrated its worth.

Is the "ultimate filter" a sexy idea? I'll be happy if your answer is "It's ridiculous!" I was told that any idea not regarded as "ridiculous" at the outset would be hopeless after all. History gives a true account. In the summer of 2006 when I was a student in the doctoral course, I accompanied my supervisor to visit Prof. M.K. Tchobanou in Moscow, who used to teach together with Prof. V. Kotelnikov at Moscow Power Engineering Institute. It is said that in the era when analog communication was the only way, Prof. Kotelnikov's doctoral thesis on trail-blazing digital communication was considered "ridiculous" by the panel of examiners in those days. Even so, the thesis was accepted reluctantly because no errors were found in his mathematical demonstration. Once the true value of his study became known, however, it was classified as a government secret and had not been known to the world until 2001 when his work was translated into English. There's no doubt about digital communication having opened up a new era of information society, although C. Shannon, who popularized it, is credited with the arrival of information society.

In today's ever-progressing science and technology, it is often said that what's useful tomorrow will be of no use the day after. I take it as a lesson: no matter how hard you work on something right under your nose, it will be superseded in no time. In order to engage in long-standing studies, we must establish deeply rooted theories. Our ongoing bold challenge to seemingly "ridiculous" themes (researchers are convinced they are reachable) will bring us to the dawn of a new era, I believe.

In our lab there are students who are good at coming out with creative ideas and those who are good at precise discussions. But they are all talented. They seem to enjoy research work day after day while appreciating freshly brewed coffee. I expect them to complete their graduation studies – in sexy and elaborative ways. Incidentally, the coffee cup I'm holding as shown in the front cover photo is my favorite one. A cup of tasty coffee with good aroma, which I enjoy in the morning, gets me ready to start a new, productive day.

Science and Technology **Information**

Future-Oriented Technology ∞ Business Creation Forum ~ Thinking about Future Lifestyles ~

Date: October 23 (Fri.), 2015 15:00 ~ 17:45 (Sociable: 18:00 ~ 19:30)
Venue: Multi-purpose Room 1, Kyoseikan Bldg. 2nd floor, Hiyoshi Campus
* Prior registration via website is required (http://www.kll.keio.ac.jp/event/new.html).

[Programs]
❶ "New product development made possible by knowing the mind: toward a future world by online measurement of sensibility"
Yasue Mitsukura (Associate Prof., Department of System Design Engineering)
❷ "Biofied buildings: Living spaces for watching and comfort"
Akira Mita (Prof., Department of System Design Engineering)
❸ Session for opinion exchange between participants and researchers
❹ Sociable (fee: ¥2,000)



新版 窮理図解

Editor's postscript

What image will you have in mind when you hear the term "adaptive algorithms"? For most of you, I'm sure, it's far from a technology indispensable to our modern lifestyle. But the term "ultimate filters" somehow reminds me of something practical. It was with such vague images that I listened to Dr. Yukawa's explanation of his studies. Just as expected, the content of his explanation was a bit too difficult for me, a novice at this field, because it was full of theoretical matters (though admitting that Dr. Yukawa did his best to explain it in an easy-to-understand way).

When it comes to things difficult, we tend to think they are something of a different world. But once knowing that it's a technology which removes disagreeable tastes like a coffee filter, I was able to feel it as something familiar to our daily life. Seemingly having understood even some of it was precious fruit of our interview with Dr. Yukawa.

(Manami Matsubayashi)

New Kyurizukai
No. 20 October 2015

Editing: "New Kyurizukai" Editing Committee
Photographer: Keiichiro Muraguchi
Designers: Hiroaki Yasojima, Yukihiko Ishikawa (GRID)
Cooperation for editing: SciTech Communications, Inc.
Publisher: Tojiro Aoyama
Published by : Faculty of Science and Technology, Keio University
3-14-1, Hiyoshi, Kohoku-ku, Yokohama, Kanagawa 223-8522
For inquiries (on "New Kyurizukai" in general) :
kyurizukai@info.keio.ac.jp
For inquiries (on industry-academia collaboration) :
kll-liaison@adst.keio.ac.jp
Website version: http://www.st.keio.ac.jp/kyurizukai
Facebook: http://www.facebook.com/keiokyuri