



Interview: Yoshihito Isogawa

Technic Master

By HispaBrick Magazine®

Pictures by Yoshihito Isogawa

In the international AFOL community there are names that transcend the borders of LUGs countries and cultures. The master Yoshihito Isogawa is one of those names. He is the author of a series of books that are indispensable to Technic fans and in this article we will learn more about his educational work with children.

HBM: How did you get started with LEGO®?

YI: When I was about 4 or 5 years old, my parents bought me a LEGO set from a department store. A couple years later, having saved my allowance, I bought an early version of the LEGO Technic series. I have been enjoying it ever since.

HBM: What LEGO sets have marked you?

YI: I love the LEGO Technic series and the LEGO MINDSTORMS series, but my favorite right now is the 9686 Simple & Powered Machines Set. It offers a good balance of parts and is recommended by many. However, being an educational tool, it can be difficult to obtain.

HBM: Has LEGO influenced the rest of your professional life?

YI: Ever since my youth, I have loved the LEGO Technic series. I studied mechanical engineering at a university and chose work in technical writing, design, and book making.



The LEGO® bricks that I loved as a child and the bookmaking skills that I've acquired through work are applied in my books. By the way, I did everything myself—model making, photography, page layouts, cover design, and pictograms—for the LEGO Technic Idea Book series and the pdf book, LEGO Technic Tora no Maki.

HBM: What project has been most demanding on you and why?

YI: The LEGO Education show is running at science museums throughout Japan. I've constructed five MINDSTORMS robots for this exhibit. The robots are in continuous operation seven

hours a day for 40 consecutive days and roughly 100 days a year. I struggled to design entertainment models that were easy on the motor yet durably constructed.

HBM: What mechanism do you think LEGO should develop or improve in the Technic theme?

YI: Models that could be improved on are those for use in water or wet conditions, such as rotary pumps and submersible motors, and those that make use of wind power. The fans in the "9688 Renewable Energy Add-on" set are a bit large, so I'd like to see more streamlined, energy-efficient fans for generating wind.

It would also be nice to have bricks that function like a dry-erase board—easily marked with a pen and wiped clean. I would also like to see thinner and more pliable MINDSTORMS connector cables. :)

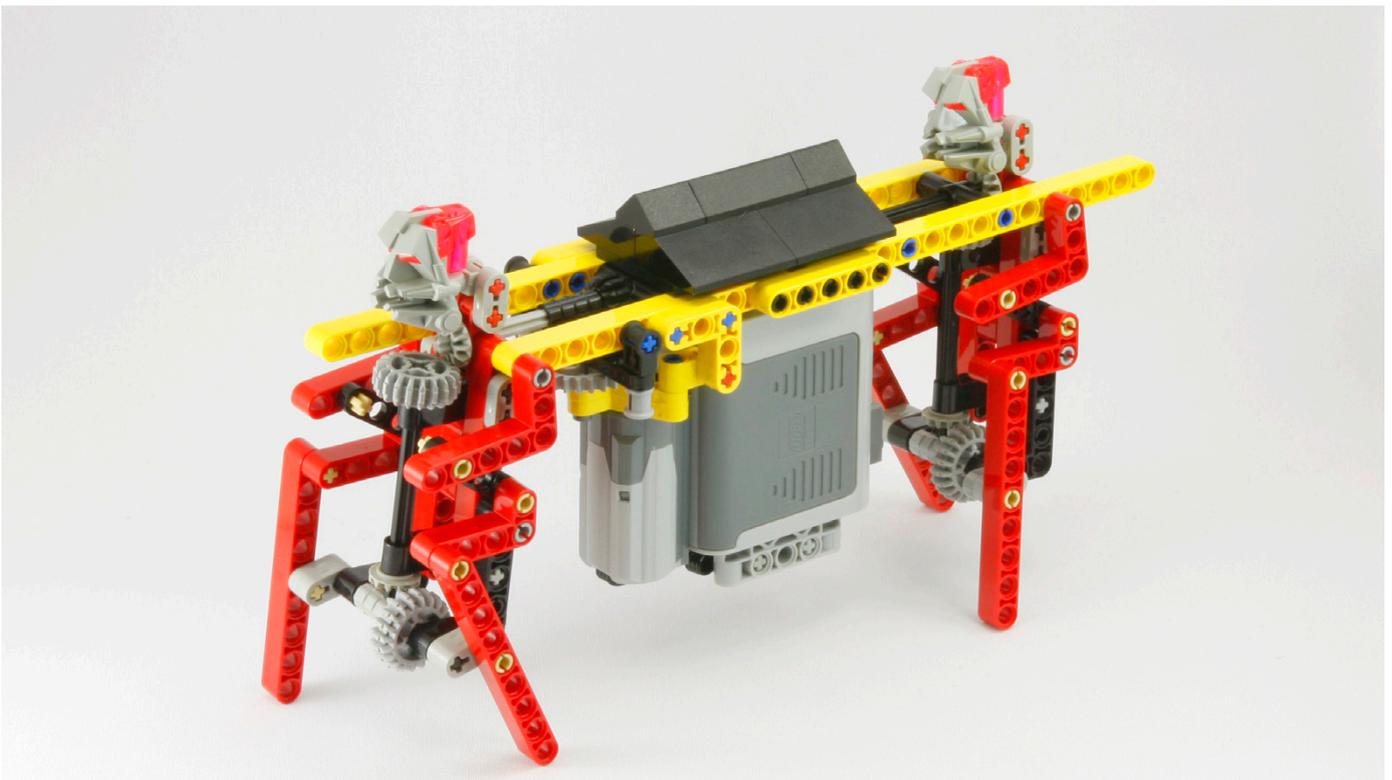
HBM: What factors do you keep in mind when building a new model?

YI: When I develop models I consider the following, in order of importance:

- 1: Develop a model that I find interesting and fun.
- 2: Develop a model that can be enjoyed by all who see it.
- 3: Develop a model simple in design, so its mechanism can be understood by simply looking at the model.
- 4: Use a total number of parts that makes it possible for those who see it to make it themselves.
- 5: Make it durable enough so it doesn't break when handled by children.
- 6: Make it look aesthetic.

HBM: What do you think are the main limitations when building with LEGO Technic?

YI: The durability of the bricks. That said, however, I would rather the LEGO bricks not be made of metal.





HBM: In addition to Technic is there any other theme you like to build?

YI: A combination of Origami and LEGO® Technic, I believe, will open up further opportunities.

HBM: How widespread is LEGO Technic and MINDSTORMS® in Japan?

YI: To be honest, the LEGO Technic and MINDSTORMS systems are known only to the most informed educators and parents. You seldom see MINDSTORMS at a toy store, and it's even rarer to find LEGO Technic. Also, the number of schools that have adopted LEGO as an educational tool is still quite low, especially, compared to schools in Europe and North America. For this reason, I am working to promote the value of LEGO Technic and MINDSTORMS to the masses. I am not even an employee of the LEGO Group.:)

HBM: On your website one can see that you are very involved in showing LEGO to small children. Which do you think are the main benefits that LEGO can provide these children?



YI: Nowadays, children have many opportunities to experience virtual situations through video games and the Internet, with fewer opportunities for real experiences. Also, when you disassemble a broken clock, radio, or electronic gadget, all you find are tiny IC chips, which are not interesting to children. I believe LEGO bricks and LEGO Technic are great for showing children the joys of real-world mechanics. Experiences such as listening to the whining of gears or feeling the occasional pain of getting one's finger caught up in gears are essential for children.

HBM: What is the best way to get these children interested in LEGO?

YI: Get children to touch remarkable LEGO creations. If an object has "Do not touch!" posted on it or is enclosed in an acrylic case, the children will not get the complete experience. If the object breaks, it can still be reassembled, which is why I prefer to be on-site at exhibitions.

Allow children's imaginations to run free. The "settle on a goal and work towards it" technique is no good. I don't want to take away the freedom to change one's mind during the creative process. As a child, with some building blocks, I once began creating a model of a dog, which gradually began to take the shape of a giraffe, and gradually, it started to take the form of the Eiffel Tower. However, the finished product was a model of the Eiffel Tower. I hope children repeatedly go through similar experiences. I believe this will bring about flexibility in their thinking.

HBM: Japan is a country where state of the art technology and robotics are very important. Does this have a positive impact on the interest in LEGO MINDSTORMS among young ones?

YI: As I previously mentioned, the LEGO Technic and MINDSTORMS systems are not well known in Japan. Only a small percentage of people—those who are able to see the value in things—are offering MINDSTORMS to children. On the other hand, a large number of children who were brought up playing LEGO® Technic and MINDSTORMS



are now on the path to becoming cutting-edge developers and engineers. For example, 14 years ago when RCX was launched I published a book on LEGO Technic, LEGO no Shikumi de Asobu Hon, in Japan. (<http://www.isogawastudio.co.jp/legostudio/bookintroduction.html#asobuhon>). A young boy who built all the examples in that book is now working on rescue robot development at a graduate school.

HBM: Your books are a reference in the Technic world. When and why did you decide to show your knowledge in books?

YI: "I show you a little mechanism. You complete the rest", is the concept in LEGO no Shikumi de Asobu Hon, issued 14 years ago, and still in the LEGO Technic Idea Book series and LEGO Technic Tora no Maki, although the way of building has changed from the beam to the lift-arm.

Fourteen years ago, I was asked by a publishing company to create a reference book for MINDSTORMS. At the time, I had been looking at many works by my colleagues from a MINDSTORMS users group I had joined. I felt that the software production technology was good, whereas the hardware production technology was relatively poor. So I told the publisher, "I think the information needed now by MINDSTORMS fans of the world, is the building technique based on LEGO Technic." "With that, I pulled together a compilation of "little mechanisms" that could be applied by any user of LEGO Technic and MINDSTORMS®.

HBM: Do you have plans for more books?

YI: At present I am developing an educational curriculum called "Burokku-Karakuri-Kenkyujo (Institute of Brick-Karakuri*)" (<http://www.facebook.com/karakuriken>) for teaching mechanics based on LEGO Technic, in schools and science museums. Once development is complete, I am hoping to convert these educational materials into other languages. Also, MINDSTORMS EV3 looks very interesting, so I'd like to issue an idea book for this kit as well.

* "Karakuri" is a Japanese word, meaning "mechanism". This word is often used for the traditional mechanized puppets or automata from Japan.

Yoshihito Isogawa:

<http://www.isogawastudio.co.jp/legostudio/>
<http://www.youtube.com/user/ISOGAWAYoshihito>
<http://www.facebook.com/isogawastudio>

The LEGO Technic Idea Book series:

http://www.amazon.es/s/ref=nb_sb_noss?__mk_es_ES=ÅMÅZÖÑ&url=search-alias%3Denglish-books&field-keywords=The-LEGO-Technic-Idea-Book

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