

JAPAN NATIONAL TOURISM ORGANIZATION PRESENTS:

# Aesthetic Sciences

A leading Japanese-American Scientist Discusses The Benefits of Holding Meetings in Japan.

**F**OR IEEE'S SPECTRUM'S 125<sup>th</sup> ANNIVERSARY, Hiroshi Ishii, associate director of MIT's Media Lab, was kind enough to participate in an interview wherein he discusses his work in one of the United States' leading havens of innovation in the field of communications technology. In the interview, Professor Ishii discusses his passion for his work, his Japanese roots, the profound cultural influence Japan had on his ideas, and Japan's role as a pioneer in the field of technology.

The Tokyo-born engineer, renowned for his continual progress in fields ranging from telcom networking to child development, aims to infuse an ethereal outlook towards the engagement of sciences, offering a much more dynamic approach to standard methods and processes. After serving as an associate visiting professor in Toronto, Ishii became the first Japanese faculty member to join the Media Lab team at MIT. His work at Media Lab has garnered significant praise not only in the engineering world but also in the art and design world, earning international accolades by several organizations, including an award from the Computer-Human Interface Academy.

## A Curious Nature

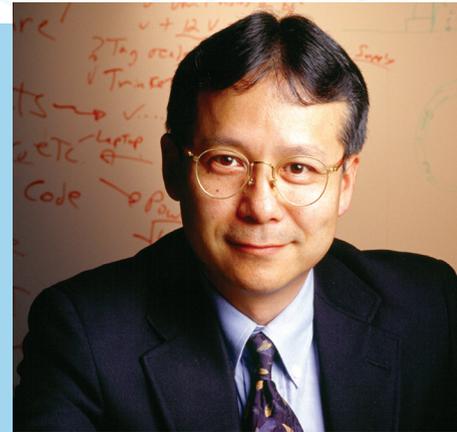
Growing up in Japan, Ishii considers the harmonious nature of his upbringing and how it is reflected in his current research. In an interview with Yahoo Japan's Rikunabi-Next, Ishii

metaphorically describes how ambient media first made a lasting impression. "We had an abacus that served as a communication tool between my mother and me. The clicking sounds the abacus made when my mother was using it taught me that it was not the right time to ask her to play with me. This notion was used as a concept in Media Lab." Ishii adds, "There was a huge impact on me after I touched an abacus for the first time since I was a child, which made me realize that tangible interfaces, such as an abacus, are direct and straight; opposite of graphical user interfaces such as a Mac."

Years later, Ishii traveled all around Japan, staying in youth hostels as he cultivated an appreciation for the arts, architecture, and nature of his home country. Noting that each region of Japan carries a rich and historic heritage, Ishii believes that the aesthetics of Japanese arts influenced his work in a subconscious yet profound way.

## A Balance of Symmetry

It should come as no surprise that Ishii would pursue a career that involves balancing the tangible with the virtual. One of his more high profile projects, Tangible Bits, seeks to eliminate the use of hardware as applied to computers, which he considers to be a machine that could visually represent the invisible without necessarily using a mouse and a keyboard as devices of manipulation. In a 2004 article with MIT Spectrum, Ishii notes, "An engineer just makes things work. But the artist asks profound, provocative



questions: What feelings does this evoke? How does this relate to the whole? What does it mean? We need to look at the entire picture... Division is dangerous"

In a way, Ishii's work is more poetic than purely scientific. The ability to visually represent the societal impact of a project with his IP Network Design Workbench, for example, evokes not only a practical development but also a certain emotional aspect that inevitably causes users to actually see and feel their influence on the modern populace. The Workbench takes surface computing to a new level, allowing researchers to tactically manipulate every day objects on a special screen that features all pertinent data, right at the users' fingertips. So if an architect, for example, wanted to visually represent and alter his designs, material costs, and measurements in one tangible interface, the Workbench would provide the space. And for the audiophile tech enthusiast, one could look no further than one of Ishii's favorite projects called musicBottles, where ordinary perfume bottles embedded with electro-magnetic tags that sit atop a tangible interface are transformed into musical instruments. The bottles communicate wirelessly

with the base as the removal of each top elicits different sounds to create an actual composition, seamlessly fusing fundamental concepts behind art and technology.

## A Cultural Influence

The professor's forward-thinking nature combined with his Japanese roots has offered an unprecedented cache around his intellectual circles, an attitude seldom witnessed throughout the tried-and-true practices of the scientific world. His Japanese upbringing is undoubtedly reflected in his research; traditionally, the Japanese culture as a whole has a unique and intensive grasp of the aesthetics of the world and nature. It is this kind of balance between man and nature that directly correlates with his work, creating a perfect harmony of the physical world and technology. "The balance between the advanced technologies and the beauty of tradition makes Japan very unique," Ishii observes. "Japan takes pride in its unique cultural heritage, yet maintains a cosmopolitan approach to innovation and engineering."

There is still an undeniable Japanese influence on Ishii's work. When asked about Japan's current role as pioneers of new technological endeavors, he notes that since the land has limited natural resources, its inhabitants have always had to work hard to create new industries based on strong tradition of arts and engineering. For example, Japan has been at the forefront of the semiconductor, electronics, car, and robotics industries, all of which combine strong senses of engineering and aesthetic design.



Sound meets science with Ishii's Music Bottles project, just one of several fascinating and intuitive projects from MIT Media Labs.



## A Nucleus of Commerce

Since several companies in Japan sponsor MIT Media Lab, Ishii returns to his home country three to four times a year to attend conferences. "Too many great international conferences organized by IEEE and ACM are happening in Japan, and I wish I could attend them all", Ishii says. "I often attend those conferences to give keynote speeches, and I always enjoy their hospitality and high standard of professional services. The extensive, efficient public transit system makes it easy to navigate from one venue to the next in large cities. You can easily find the best route and estimated time to travel with trains and subways using online web service."

As media research and development continues, Japan has undoubtedly emerged as a hotbed of technological innovation. "At conferences in Japan one is able to enjoy the fruits of international collaboration and ingenuity while appreciating how local influences have shaped the course of Japanese engineering industries."



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**Yokoso!**  
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CONTACT INFORMATION:

Japan National Tourism Organization  
Japan Convention Bureau  
Tel: 212-757-5641  
E-mail: jcb@jntonyc.org  
www.japantravelinfo.com



Tokyo Night Cityscape with Mt. Fuji in the background.



Cherry blossoms at Himeji Castle.