Membership: Member Profiles

W. Kenneth Jenkins

W. Kenneth Jenkins is an IEEE-HKN Governor at Large. He received the B.S.E.E. degree from Lehigh University and the M.S.E.E. and Ph.D. degrees from Purdue University. Dr. Jenkins' current research interests include fault tolerant DSP for highly scaled VLSI systems, adaptive signal processing, multidimensional array processing, computer imaging, bio-inspired optimization algorithms for intelligent signal processing, and fault tolerant digital signal processing. He co-authored the book Advanced Concepts in Adaptive Signal Processing, is a past Associate Editor for the IEEE Transaction on Circuits and Systems, and a past President of the CAS Society. Dr. Jenkins is a Fellow of the IEEE and a recipient of the 1990 Distinguished Service Award of the IEEE Circuits and Systems Society. In 2000 he received a Golden Jubilee Medal from the IEEE Circuits and Systems Society and a 2000 Millennium Award from the IEEE. In 2000 was named a co-winner of the 2000 International Award of the George Montefiore Foundation (Belgium) for outstanding career contributions to the field of electrical engineering and electrical science and in 2007 he was honored with an IEEE Midwest Symposium on Circuits and Systems 50th Anniversary Award.

Why did you choose to study the engineering field?

From my early days of childhood I was one of those kids that inherited the "Knack." I loved to play with erector sets, build crystal radios, build Heath-kit electronic systems, build go-karts, work on cars, work with ham radio equipment, etc. I inherited this through my paternal grandfather who was a "mill mechanic" with a steel company, and my father who was a machinist at the Gulf Research Center in Pittsburgh, PA. To this day I like to take things apart, see how they work, fix them, etc., with the hope of being able to help design better products in the future.

What do you love about it?

I like to be able to understand and work with all of the technology that has become part of our daily lives over the past century. In particular, I have enjoyed and thrived on the field of "digital signal processing" that has invaded our homes and our daily lives over the last half-

century. Digital TV has come into our homes about two years ago, and the Kindle appears to be the next DSP home invasion that is currently in progress. This process will continue to escalate in the years to come and will be very important in the health professions and in enabling ways to provide "smart spaces" for elderly people to live in more comfortably. I also like to teach the principles and basic concepts of DSP to the future generations of "kids with the knack."

What don't you like about it?

There is not much about the Electrical Engineering profession that I do not like, but I am very concerned with the low level of interest among the young people in the U.S. in pursing Electrical and Computer Engineering professions. It seems that the U.S. has slipped in educating our young people in science, mathematics, and technology and that other parts of the world are moving ahead of us in this regard.

Who do you admire?

I admire engineers and scientists who have brought certain types of engineering and technology into our daily lives in a way that improves the quality of life. Numerous individuals responsible for advancing the state-of-the-art in non-invasive medical imaging, cell phone technology, internet connectivity, etc., are among the people I admire the most. I also admire certain entrepreneurs such as Bill Gates and Steve Jobs who have demonstrated extraordinary vision in terms of how technology can positively impact the quality of our daily lives. While Bill Gates and Steve Jobs were not educated as technical engineers, they had the business suave that led them to depend on technical scientists and engineers and to use appropriate technical expertise to build their corporate empires.

How has the engineering field changed since you've started?

Due to the enormous degree of miniaturization of electronic components leading to very dense VLSI systems, Systems-on-a-Chip, etc. the field of Electrical Engineering has become much more abstract and difficult to see and visualize. An example of this occurs in robotics, which is a field that many young students want to pursue in their studies. I often point out to prospective students that robotic systems contain three levels of technology, the Arnold Schwarzenegger level (muscle), the Albert Einstein level (brain), and the Bill Gates level (software). The muscle is the part of a robot that people can see and understand, but the brain and the software are very not visible and what is required of these systems and how they can be designed may not be so easily understood. In the future technological advances will continue to come into our lives at an exponentially increasing rate and the need for much improved technical understanding among the general population will become increasingly important.

What direction do you think that the engineering field is headed in the next 10 years?

Technical advances in Electrical Engineering will most likely continue to develop at a very rapid rate, resulting in increasing amounts of technology coming into our homes and our daily lives. In particular many of these technological advances will have strong impact on the health professions and on the creation of more "smart spaces" where the elderly can live their lives more comfortably and remain independent for longer periods of time. The world will continue to become more interconnected and businesses will become more globalized.

What's the most important thing you've learned in the field?

There are two basic things that I have learned about the field of Electrical Engineering that I believe are fundamentally important. The first is that due to rapid advances of technology in the field of EE it is important for practicing engineers to stay on top of these changes and to continuously be a "self-learner." The second things has to do with how important and all-encompassing electrical technology is in our daily lives and that we must be prepared to take full advantage of it in order to "live the good life."

What advice would you give to recent graduates entering the field?

In the future engineering technologies will become more inter-disciplinary and in many cases will be heavily influenced by business practices, the medical profession, the legal profession, and entrepreneurial opportunities.

If you weren't in the engineering field, what would you be doing?

I may have gone into the field of dentistry, orthopedics, or some other field related to the health professions.

Finish this sentence. "If I had more time, I would...

...put more effort into my hobby interests, such as working with sport cars, home remodeling, and home theatre projects.

All IEEE-HKN members may submit a completed profile of him/herself or someone else. Please submit the profile questionnaire to info@hkn.org. You can also submit suggestions for profiles by nominating names to info@hkn.org.