

This monthly article highlights one of our branch members. We hope that you enjoy knowing a little more about your fellow members and the interesting life they have had. If you have someone you would like to nominate or if you would like to help author an article, please email the editor, Ron Nakamoto, at [ron.nakamoto\(at\)yahoo.com](mailto:ron.nakamoto(at)yahoo.com).

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“Theodore Roosevelt, our 26th President, best stated the principal that has guided the work and life choices I have made. I quote:

“Far better to dare mighty things, to win glorious triumphs, even though checkered by failure, than to take rank with those poor spirits who neither enjoy much nor suffer much, because they live in the gray twilight that knows not victory, nor defeat.”

“Throughout my life and my career at IBM Research, I have proposed and help start a number of projects that succeeded greatly ... or failed miserably. One of my successes included the research that led to the Tivoli Storage Manager product family that generated well over a billion dollars of revenue for IBM. *(Editor’s note: TSM was created from original research done at IBM’s Almaden Research Center around 1988. The purpose was to design a capability to back up PC/DOS, OS/2 and AIX workstation data onto a VM/CMS (virtual machine/conversational monitor system) server. The heart of the VM architecture was a control program that ran on the computers and created a software environment that resource shares device management, dispatching, storage management and other traditional operating system tasks. The big deal commercially was the ability of businesses to now bundle heretofore-discreet computer resources together to act as a single system.)*

A second success was the IBM Patent Server that revolutionized the management of U.S. patents. *(Editor’s note: IBM’s Patent Server helped to revolutionize the world of patent information. Up until then patent databases had largely been the reserve of the traditional online hosts and, with rare exceptions, were confined to abstracting and indexing databases only. IBM’s service was the first to go beyond bibliographic data and abstracts by offering searchable claims and scanned images of the full text.)*

“Of course, ‘... daring mighty things ...’ often results in failure. One of my failures included a project called ‘CueVideo’ which was original research to

address the challenges that arose in the creation, indexing and use of large video databases. CueVideo was designed to address the two bottlenecks preventing video from becoming an integral part of distributed learning. The technical aspects of the project were achieved but the project failed because IBM chose not to commercialize it to avoid competing with its customers. This taught me a valuable lesson that a success is determined by more than just its technical merit.

“I am a researcher. Here is my story.

“I was born in Revere, MA, which was a poor ocean-front community that had dance halls, movie theaters, carousels, roller coasters and all kinds of specialty attractions like a horse and dog track for gambling. My father and mother ran a grocery store and my father also ran an oil delivery business. I grew up with two siblings, a brother six years older who became an attorney, and a sister eight years younger who raised a family. I started working at age twelve selling newspapers at the tracks. At age fifteen I began working at the amusement park guessing people’s ages (within three years), helping run a merry-go-round and hawking/operating a roulette wheel. My favorite pastime was playing pool after school.

“In 1950, I enrolled at Boston University as a business major which I soon found was not my cup of tea, and with the Korean War raging, I enlisted in the U.S. Navy and eventually served four years with a rank of Teleman 3rd Class which was a new discipline involved with communications intelligence. After the Navy, I returned to Boston University as a Physics major. I always loved science and disliked business, which my parents had pushed me to pursue. When I applied to change majors I was told that students usually went the opposite way and challenged me to take a calculus chemistry course as a prerequisite to transfer. I did with relish and was soon a science major. I graduated with a BA in Physics, and later a MSEE from New Jersey Institute of Technology.

“While at Boston University, I met a young freshman, Mimi Apkon, a BU Nursing School student who was tossed into my lap by a friend. Yes, she was literally tossed into my lap. We hit it off and I made a date with Mimi. The first of our many dates was to Howard Johnson’s restaurant. We fell in love and were married in 1957. We have been married now for some sixty-one years. We have three children, Michelle, Janet and Nanci, and two grandchildren, twin girls Devon and Schuyler. Two of our children live in the bay area and one lives in southern California.

“My first job was with Boeing working on the BOMARC missile. Eighteen months later, I joined Western Electric and was assigned to Bell Telephone Labs working on the IBM 7090 computer. Here, I worked on a computer program to analyze and reduce data from the Bell Labs Radial Inertial Guidance System and immediately fell in love with programming. Bell Labs had an extensive computer programming education program which I was invited to join, after which they sent me to Stevens Institute of Technology where I acquired further computer skills. The program I developed was one of the tools used to evaluate the Bell Labs Radial Guidance System that at the time controlled almost all United States Satellite and Titan tests.

“In 1966 I joined IBM Research in Yorktown Heights, N.Y. and after some time was honored with the title ‘Distinguished Engineer’ for technical work on several major projects. As a researcher, curiosity and problem solving coupled with tenacity drove my participation on many discoveries. An example was when my desktop disk overflowed so I came up with the idea of ‘defragging’ a disk to clean it up and free more space on the disk. This computer program was subsequently incorporated into the IBM MVS Hierarchical Storage Product family. “Some of my major technical achievements were:

1. The IBM Repository: The Mormon Church transitioned their entire paper and file genealogy system to this index and search repository.
2. MVS Hierarchical Storage Manager: The MVS design drastically reduced the cost of managing data storage and simplified the retrieval of data from slower media (*remember tape drives?*). The user did not need to know where the data was stored and how to get it back as the computer program would retrieve the data automatically. An interesting bit of history was when IBM submitted a patent for this design, the U.S. Patent Agency would not issue a patent because software at that time was not deemed patentable.
3. Tivoli Storage Manager (TSM): Conceived with Allan Bell Ringmaster, we designed TSM, which had the unique capability of backing up data from different devices.
4. The IBM Patent Server: This design revolutionized world patent information storage, search and retrieval

“In 2009 I was honored by IBM with ‘Distinguished Engineer Emeritus’ and am currently working on research in Neuromorphic engineering. Once a year IBM Almaden Research Lab has a contest for new ideas and projects. I was one of the contributors to the project. ‘*Cognitive computing programming paradigm: A Corelet Language for Composing Networks of Neurosynaptic Cores*’ published in 2013 and presented at The 2103 International Joint Conference on Neural Networks (IJCNN) and ‘*TrueNorth Ecosystem for Brain-Inspired Computing: Scalable Systems, Software and Applications*’ published in

2016 and presented at the Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis are two of the papers I have supported with a number of other contributors including the lead, Dr. Dharmendra S. Modha who was a presenter at one of our SIR luncheons. The IBM TrueNorth project team is currently working with the Air Force Research Lab to create a 64-chip array (four boards each with 16 chips) emulating a 'spiking neural network'. Deep networks are now able to achieve human-level performance on a broad spectrum of recognition tasks. In addition, neuromorphic computing has now demonstrated unprecedented energy-efficiency through the new chip architecture.

"I have seven patent applications pending and four U.S. patents granted. These patents are in storage, video, system management and cognitive science. I have enjoyed over forty-three years actively working at IBM, primarily in research and in addition to the patents, have published a number of technical papers. For the last nine years I have been working in the cognitive computing area. I still get excited about my work.

"I enjoy my association with SIR, the camaraderie at our monthly luncheons, talking to my peers, listening to our invited speakers and actively participating as a co-leader promoting our Bocce Ball activity on Fridays. Teddy Roosevelt said it best about taking risks and I've used that machete to carve my pathway in life. My parting message to my fellow members is this; *'The key to success in any field is to be direct and forthright and at the same time adopt a restrained, soft spoken and tactful approach with others. Recognize your failures and address them.'*

"One of my favorite readings is from a book by Carol Tavris and Elliot Aronson, *Mistakes Were Made (But Not By Me)*. It is a great read."