

## Life Is an Adventure for NuTech's Zbigniew Michalewicz

By Bea Quirk, Special To LTW

*'To take that step forward into nothingness – how could you live your whole life without knowing how that feels?'* – Zbigniew Michalewicz on sky diving

CHARLOTTE - When you hear that someone in a high tech firm spends his time thinking about neural networks, genetic algorithms and fuzzy systems, you figure the man is a real math geek, one whose world is limited to cold numbers and unfeeling equations.

Polish-born Zbigniew Michalewicz, 50, doesn't fit the stereotype at all. Just listen to the NuTech Solution co-founder's philosophy of life: "Everything is an adventure, and mathematics is one of them," he says.

This past year, Michalewicz went scuba diving for the first time, and in late November, tried skydiving for the first time, jumping out of an airplane at 13,000 feet. "I couldn't resist the experience," he says. "To take that step forward into nothingness – how could you live your whole life without knowing how that feels?"

Knowing how Michalewicz feels about life, his story is not surprising – emigrating from Poland in 1982 and ending up at UNC Charlotte as head of its Computer Science Department in 1989, then leaving the university in 1999 to begin, with his son Matthew, NuTech Solutions, Inc. By that time, both were U.S. citizens.

By combining several artificial intelligence technologies, NuTech offers Fortune 500 companies the ability to optimize profits through simulation software and modeling techniques to facilitate and improve the decision-making process.

NuTech has raised \$12 million from private investors, including former Bank of America CEO Hugh McColl, and is now at the break-even point. Clients also include the U.S. Department Defense, and former Polish President Lech Walesa sits on the board of directors.

Here's Michalewicz's story in his own words:

What did you do in Poland before you immigrated to the US? Was it difficult to pursue your work under the Communists?

In 1975, I joined the faculty of the Institute of Computer Science, Polish Academy of Sciences, as a researcher. In 1981, I got my Ph.D. in computer science from this Institute. My main responsibility was research, and I was interested in some aspects of database security.

In 1980 and 1981, it was harder and harder to pursue my work, mainly due to the economy. Research institutes had less and less money to get scientific journals, books and other publications. Remember, there was no Internet at that time!

### **When did you emigrate? What did that entail?**

My wife Ewa, my son Matt and I left Poland in June 1982, moving to New Zealand, where I had accepted an offer from Victoria University in Wellington. We left our apartment behind and took only a few personal items with us. It was relatively easy once you got a formal invitation from another organization.

### **Why did you decide to leave Poland?**

We left Poland for many reasons. These include a difficult economy and very hard times at work, where I had practically no access to scientific publications. We felt there was no future for us if we stayed. No one at that time knew that the years of communism were soon to end.

I was staying in touch with a few universities, and when we decided to leave Poland, I wrote a few letters expressing my intention. The quickest and nicest reply came from Victoria

University, and I accepted their offer. I was also fascinated by this country, as I knew very little about New Zealand at that time. Only seven years later we moved again; from New Zealand to Charlotte.

**When did you begin at UNC Charlotte? What were the biggest adjustments to living/working here?**

We arrived in Charlotte in July 1989, just two months before Hurricane Hugo. I was excited about experiencing a hurricane, and wanted to go to the coast to see it, but friends told me I was crazy and convinced me to stay here.

I started at UNC Charlotte immediately upon arriving. (Actually, I got an offer from them one year earlier, while visiting the university from New Zealand). I do not believe there were any huge adjustments to working here, but there were some to living. The lifestyle of Charlotte is very different to the lifestyles of other places I have been. I would like to underline here, that I have been in 34 countries, so I have some material for comparison.

In the late 1980s, there were very little evening activities, and I missed the European style of walking. It's very car-oriented here, and that was very different to me. You never saw any pedestrians, and there was no way to cross the streets. But there have been huge changes since then, especially downtown. They're building apartment there now, and you now see cafes and little restaurants with tables and umbrellas on the sidewalks.

**Did you ever consider going back to Poland, especially after the Communist regime collapsed?**

When we left, everyone knew the system would collapse – it didn't work. But we figured it would take 50 years, that it wouldn't happen in our lifetimes. So we had a mindset that we were leaving forever. So when the Communists fell, it was a little too late for me – it was a different country than when I left, and my desire to return was lower. I had friends in other countries. And Matt was in high school, and he had grown up in New Zealand and the U.S., so his Polish wasn't that sophisticated. We were concerned he'd have trouble adjusting if we returned.

**Is mathematics a universal language?**

When a group of scientists are together, it certainly is. Equations do express ideas. But I don't necessarily believe the world would be a better place if everyone spoke the language of mathematics. Mathematics is too precise, it removes the charm from life. Even though my wife is an engineer, I would never talk to her in mathematics – it would be cruel, it would remove the mystery from our life. (Note – Ewa also has an MFA degree and is a painter; her works are on display throughout the NuTech office.)

**When did you realize the commercial potential of your work? What made you decide to start NuTech, and how did you end up founding it with your son? Was it difficult to leave the university?**

I am still in the process of discovering the full commercial potential of my work. I was convinced by Matt that I should join NuTech (it was his idea); at that time I was the chairman of Computer Science Department at UNC Charlotte. In some sense, it was difficult to leave the university: first, I had spent 25 years of my life in research institutes, second, after 11 years at UNC Charlotte, I had developed many friends.

In academia, your work is evaluated by books and articles; in business, it's contracts and outcomes, a very different language. There's zero overlap.

**How are NuTech's products/technology different from what your competitors are offering? If you don't have any competitors, what do you offer that sets you apart?**

Our technology, I feel, is quite special. First, it is very diverse: we have experts in evolutionary computation, ant systems, neural networks, fuzzy systems, rough sets and others. Second, we master some techniques for combining these technologies into unique, powerful engines, which easily outperform technologies based on a single technique. We have many competitors, if you look at other companies selling logistics optimization, risk management or marketing products. On the other hand, we do not have many competitors from the technology point of view.



**How do you share decision-making and job responsibilities with your son?**

I do not share decision-making responsibilities: I just follow Matt's vision...

**Whose idea was it to invite Lech Walesa to join the board? How did that come about?**

The managing partner of our Polish office was staying in touch with the President of the Lech Walesa Foundation. Over time, the interest about NuTech was growing, and early this year, we were invited to make a presentation to Mr. Walesa. This started the process, which matured in his acceptance in April this year.

**What is the long-term potential of the technology you have developed?**

Huge. At NuTech, we maintain considerable research and development activities and stay up-to-date with innovations made in this field. It is only a question of time when all major corporations will use this type of technology to optimize their decision-making processes.

**NuTech Web site:**

[www.nutechsolutions.com](http://www.nutechsolutions.com)

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