Just two years after graduating with an MSEE from Rensselaer Polytechnic Institute, Shuba Swaminathan co-invented USB thumb drives. Her work resulted in five issued US patents with nine more pending.

Swaminathan, an electrical engineer, presented a working prototype of her data-storage device to upper management in 2001, but was disappointed to learn that it would not be brought to market due to budget constraints. Six months later, thumb drives were introduced to the mainstream market by Taiwanese manufacturers with Israeli companies claiming credit for the invention. “It was a low point in my career,” recalls Swaminathan. “I had the technology sitting on my desk. If only I had been savvy enough to bring it to market.”

The experience was an awakening for Swaminathan. “I realized that as an engineer I can create amazing new products,” she says. “But unless I have the ability to make my work known and to sell my products to upper management and the rest of the world, they will never see the light of day.”

Eight years later when Swaminathan’s son was born, she decided to take time off from corporate America. She was comfortable in various roles—hardware designer, market analyst, software engineer, and inventor—but she found that of a stay-at-home mom the most challenging. During that time, however, the idea for her first startup was born.

“One seemingly simple task that I found to be increasingly difficult with a child in tow was going to the grocery store,” she says. “So I created a service offering that would alleviate the difficulty.” Her startup Smart Shopping Solutions allowed customers to order their groceries from home using cell phone cameras. When a customer ran out of a specific item in the kitchen, they would send her an image of the product’s barcode. This information would then be translated into a shopping list to be sent to the customer’s favorite grocery store. The store then gathered and packaged the goods to be picked up later. “It was a great enterprise,” she notes. “Clients were willing to pay for the creation of the offering, and retail stores backed the service since it brought in more repeat shoppers.”

Her business stalled in 2008 when a Germany-based company filed a lawsuit claiming that they owned the proprietary rights to translate barcodes into numbers. The case was dismissed in court, but by that time Swaminathan had been accepted to MIT Sloan. Since she had already spent six months unable to deliver her grocery service to clients, she decided to pursue her education instead.

In her first year, she won first runner-up in the 2008 Elevator Pitch Contest in the mobile track, and began working on her second startup, which involves digital receipts. “My time at MIT Sloan has taught me how to quantify the value of my entrepreneurial ideas and speak the language of management,” she explains. “After graduation I will be pursuing more startups. I thrive on the fast pace at a startup and the opportunity to wear many hats while building something of practical value. Working as an entrepreneur dovetails many of my strengths, leverages my education, and gives me tremendous professional satisfaction.”