

Another Successful Delivery

How keeping their heads “in the cloud” brought two men from Sri Lanka to Tokyo, and how Rapyuta Robotics is bringing change to the world.

by John R. Harris



Arudchelvan “Arul” Krishnamoorthy’s drive and perseverance have opened the door on a bright future with robotic technology in Tokyo.

In 2001, at the height of Sri Lanka’s civil war, a small seed was planted when the Japanese government’s scholarship program gave two bright young boys from the island nation the chance to study in Japan. Twenty years later that seed has blossomed into Tokyo-based Rapyuta Robotics, a successful startup co-founded by Gajan Mohanarajah (CEO) and Arudchelvan “Arul” Krishnamoorthy (CFO).

“First year we went through intensive language training, learning 20 kanji a day,” Arul remembers. “It was tough, but we learned enough to enter one of Japan’s top engineering schools, Tokyo Institute of Technology, and pursue our shared passion for robotics.”

Armed with engineering degrees after five years of tuition and living expenses supported by their scholarships, the pair went on to do post-graduate work abroad: Arul doing an M.A. in Financial Mathematics at Columbia University in New York; Gajan studying robotics at the Swiss Federal Institute of Technology in Zurich (ETH Zurich).

That might have been the end of their links to Japan, except that work with Nomura Securities as a derivatives analyst drew Arul back to Tokyo in 2010. And when Gajan came back to Tokyo for a conference in 2013, the two began to brainstorm a bold idea.

“Japan is famed for robotics,” Arul explained. “But as it’s much stronger in hardware than software we saw an opportunity to close that gap. Plus, Japan is a large market with growing demand for automation as its labor force shrinks. It has great internet infrastructure and a deep IT talent pool. We have the language and cultural skills to navigate this market. And Tokyo feels like home to us. So, we decided to do it here.”

With that rationale, Rapyuta Robotics Co., Ltd. was founded in 2014. Today, the company—selected as an Innovation Tokyo Project of the Tokyo Metropolitan Government in 2021—has 80 employees in Tokyo with 30 more in Bengaluru, India, and its software is used by a growing range of corporate clients.

“Our key insight is that truly intelligent and capable robots require much more computing power than

you can reasonably put onboard a compact, cost-effective machine,” Arul said. “The brainpower needs to be in the cloud. So, we set out to build rapyuta.io, a cloud-based operating system that can effectively manage and coordinate a fleet of robots.”

Rapyuta’s key target market is warehouse operators such as parcel-delivery companies and online retailers. The goal is to maximize the intelligence of today’s warehouse robots within the limits of their current physical capability. So far, robots can automatically transport goods around a vast facility, but they still need humans to pick boxes off the shelves and load them onboard.

Rapyuta has focused on that man-machine interface. For a radically simplified example, the software might tell the robot to go to position X on aisle Y where a particular product is located and a human worker will meet it. Once the robot’s screen tells the worker how many units of which product it needs, he/she loads the items and sends the robot off to the next picking location or packing line.

To enable this procedure, Rapyuta had to master three key functions: localization (where each robot is); navigation (moving around a complex environment without hitting anything); and multi-robot coordination (efficient fleet management). Again, this is a radically simplified description.

The true elegance of Rapyuta’s cloud-based platform is the scope it affords to grow and flexibly adapt in pace with robots’ physical capabilities, which are sure to increase rapidly. Rapyuta’s long-term ambition is to stay at least one step ahead of the game.

Who can doubt that Gajan and Arul will stay several steps ahead of the game? Driven by a shared passion for robotics since their high school days in war-torn Sri Lanka, they came to this country without a word of Japanese, quickly mastered the language, and rose to the top of highly demanding disciplines. Now their company is set to take on the world.

For us, Gajan and Arul are wonderful proof of what can grow from one small seed, and what can grow in Tokyo, a city where even the most ambitious dreams can be achieved.