



Why Senior Living Providers Need to Care About AI

By Pam McDonald

In Part 1 of this blog, Vikram Devdas, the founder and chief strategy officer of [Blue Willow Systems](#), explains basics about artificial intelligence and how he came to use it in this senior living resident safety system. You can read that article here: "The Essential Things You Need to Know About AI (Artificial Intelligence)." [\[LINK\]](#)

Blue Willow Systems' AI

After founding his company in 2015, Vikram's goal for Blue Willow, a Senior Housing Forum partner, was to design a system using artificial intelligence to automatically recognize falls. That is, to identify the patterns that constitute them; to recognize what is a fall and what it is not.

He and his team developed a system that consists of unobtrusive, lightweight "BlueBands" worn on the wrists of residents and staff. Each contain multiple sensors; additional sensors are placed throughout client senior communities.

The sensors are designed with a proprietary algorithm and neural networks. They send a signal 24/7 to the engineered, cloud-based "BlueHub" receiver that has been taught to recognize a vast variety of fall patterns.

Vikram says, "At first we used actors and stunt people to fall. We fed hundreds of thousands of falls into a computer. Later we put sensors on real seniors to see if their fall patterns existed in the collected data base.

"Variable data is difficult to detect and recognize. Blue Willow's data was coming from a band on a person's wrist. Falls were so difficult to recognize from the wrist that most companies trying to do it gave up."

After almost 50,000-laboratory fall sets, the Blue Willow's engineers were satisfied that the system could detect falls versus other movements in unlimited possible scenarios. While Vikram notes that "no system works 100% correctly, Blue Willows' rate is quite high, and its false alarms are very few."

Can Senior Living Trust Decisions Made By AI?

"Why not, especially if it works better than existing methods?", Vikram responds. "Reliance on residents pulling a cord or pushing a button results in a much lower rate of fall detection than Blue Willow. And, it never worked well for residents who were unconscious, had a broken arm or leg, or dementia."

He notes that falls and wandering result in more lawsuits than other occurrences in senior living. He believes Blue Willow can save companies money by reducing the likelihood of lawsuits. "Additionally," he says, "it solves another major problem for senior living; most falls happen in residents' apartments where, typically, there is no staff."

Blue Willow Is Not HAL

I'm possibly too influenced by science fiction movies, but I had to ask Vikram how he was sure Blue Willow's AI would remain benign. He assured me there's no danger of it becoming HAL from 2001: A Space Odyssey. He says, "It's not being taught to think in a general sense or on its own."

"It has no emotion. It's not being taught to be evil. It's taught: these patterns equal a fall; other patterns, not a fall. It's very primitive 'thinking', although its functions are extremely valuable to senior living residents, families, and managers."

From Data to Actionable Intelligence

Vikram is quick to point out that it is not sufficient for a system to merely detect a fall. Staff has to be alerted and advised of the resident's location. "That's what Blue Willow does very accurately," he says.

"It automatically detects a fall in real time, alerts staff through mobile devices and desktop computers, shows precisely where residents and staff are on geolocation maps, and escalates the alert if need be."

It also automatically generates incident reports for each occurrence and stores relevant meta-data for workflow management, risk management assessments, and

advanced computation to show patterns and other conclusions that can be used to improve operations and reduce costs.

The team at Blue Willow is able to use data collected to consistently add new safety features to the system -- like automatically alerting staff to elopements of memory care residents.

But that's a story for another time . . .



This article has been brought to you by [Blue Willow Systems](#) in partnership with [Senior Housing Forum](#).