



Enhancing Elderly Care at Azalee’s Senior Care Facilities with Voxela’s VCare Solution

In this case study, we examine the deployment of Voxela’s VCare solution across two sites: **Azalee Annex** and **Azalee Edogawa** in Tokyo.

We explore the challenges faced, the implementation process, resulting fall detection & prevention, and overall improvement in the quality of life of both residents and the staff.

The challenge: Managing falls among elders in a large facility

Azalee is a well-established senior healthcare facility in Tokyo, known for its commitment to providing comprehensive care and support for the elderly. Located in a serene environment, Azalee offers both residential and assisted living services tailored to the diverse needs of its residents.

Before adopting Voxela’s AI system, Azalee relied on conventional fall detection methods such as floor sensors and bed sensors. These systems, however, generated several false alarms due to their inability to differentiate between a fall and other normal movements. Additionally, wearables like smartwatches proved to be impractical as residents often forgot to wear or charge them.

The limitations of these methods prompted Azalee to seek a method that could accurately detect and analyze falls, while also addressing privacy concerns.

The solution: Voxela’s Vision AI technology

Voxela VCare provides a non-invasive solution that monitors rooms and common areas for falls, bed exits, and other movements. The technology uses AI-powered video analytics to distinguish falls from other actions, sending short, privacy-protected video clips to caregivers for immediate review.

This approach allows caregivers to assess the situation in real time, address the fall quickly, and analyze them to prevent future incidents. VCare only captures footage of the fall for future analysis.

For example, at Azalee Annex, one resident fell while attempting to exit the bed from an unexpected direction, between the bed and the wall. Despite the use of guardrails and sleeping mats, traditional sensors failed to detect the issue.

However, VCare’s AI captured and alert this incident, enabling caregivers to respond within one minute and identify the root cause. By adjusting the bed placement, they effectively reduced the risk of similar incidents in the future.

This incident was shared with staff from another facility with ease using the video-based explanation. This allowed caregivers to learn from others’ experiences and also helped them prevent further mishaps in their own facility

Azalee’s facility leader deployed Voxela’s technology with financial help from the Japanese government and signed a multi-year contract after being impressed by our technology.

Azalee Group, established in 1999, operates senior care facilities in Tokyo's Edogawa Ward. Their flagship, Azalee Edogawa Intensive Care Nursing Home, offers 24/7 care, including permanent residency, respite care, and day services, promoting residents’ independence. The Azalee Annex Carehouse provides assisted living with private rooms and continuous care, fostering intergenerational connections through an on-site daycare.

Implementation and challenges

The deployment at Azalee facilities involved installing 60 cameras across both sites. Voxela's team conducted a site survey to establish optimal camera placement and protocols. The installation was completed over a week, with 20 cameras set up in batches.

Voxela's bulk registration feature streamlined the configuration process, allowing all cameras to be integrated into the system simultaneously.

Addressing Privacy Concerns

During the deployment phase, both residents and staff expressed privacy concerns. To lessen these concerns, Voxela ensured that only incident-related videos would be captured and stored.

That is to say, VCare is different from regular CCTVs in the sense that it does not record all the footage throughout the facility, but rather only records the time leading to the fall and shortly after, to allow caregivers to assess the situation. Moreover, all videos are automatically blurred to protect the privacy of residents. Once caregivers and staff saw the blurred footage and understood the system's non-invasive nature, they became more comfortable with the notion of installed cameras and monitoring systems.

Metrics and System Performance

Voxela measures the performance of its AI system using several key metrics, including false positive (FP) and false negative (FN) rates. The company strives to minimize both, aiming for a system with high precision and recall, often measured by a high F1 score.

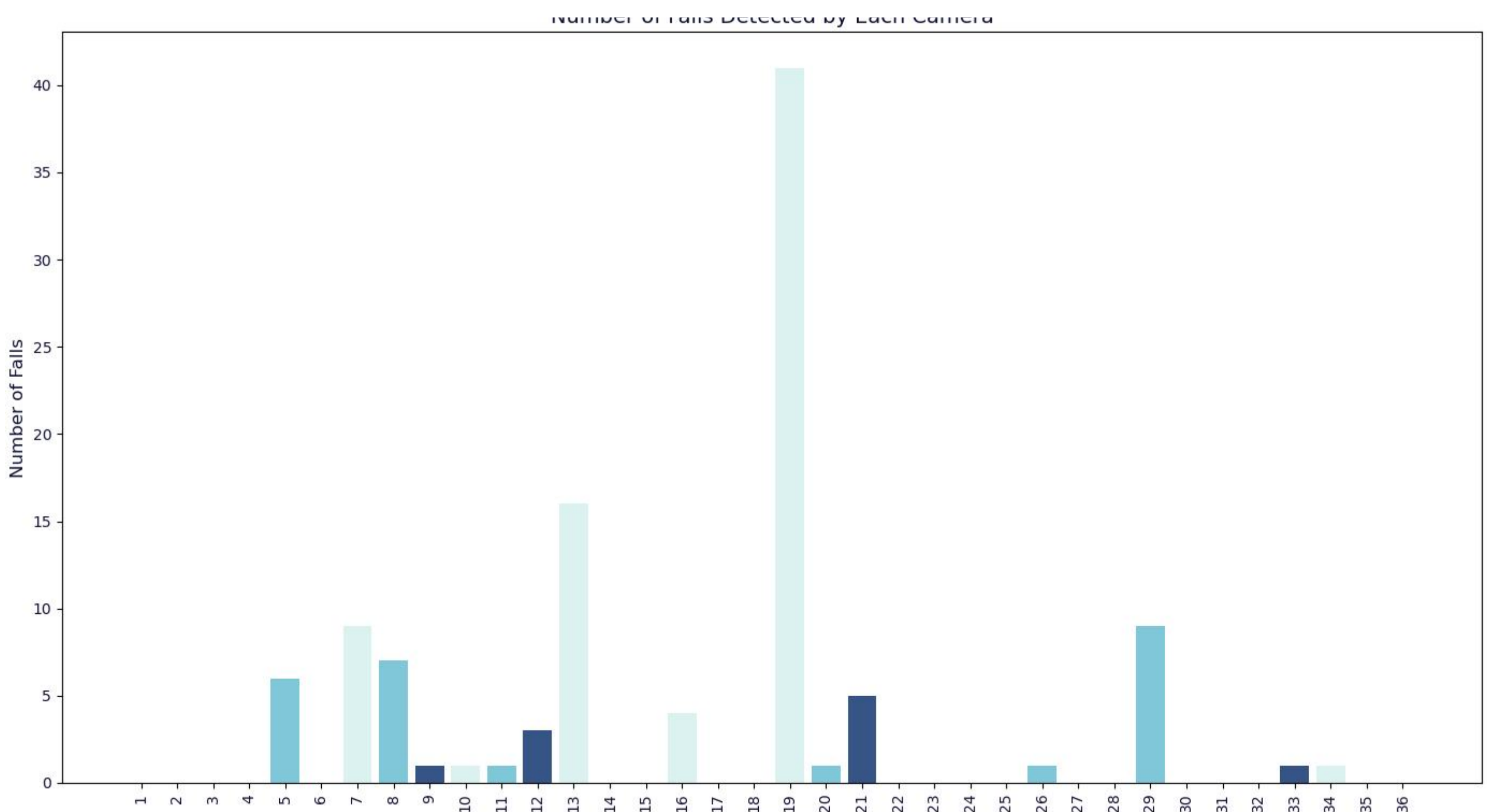
During the initial deployment at Azalee, the system encountered a higher rate of false alarms due to lower bed heights.

However, by fine-tuning the AI model to accommodate the unique conditions at the facility, the rate of false alarms dropped significantly. Today, Azalee experiences very few false alarms, and caregivers have come to trust the system's accuracy.

The graph shows the distribution of falls across different areas in the facility, showing that certain zones experience significantly more falls than others. This insight allows Azalee to identify high-risk locations and implement targeted interventions, such as adjusting environmental factors or allocating more staff to these areas.

By focusing on these fall-prone zones, Azalee can enhance resident safety, reduce the overall number of falls, and demonstrate the efficacy of their fall prevention system. This data-driven approach also supports future safety improvements.

Outcomes:



Reduction in Emergency Room Visits

One of the most important outcomes has been the reduction in emergency room visits. Previously, a significant number of falls led to unnecessary hospitalizations, as caregivers lacked the information needed to assess the severity of each incident accurately.

With Voxela's system, caregivers can now review video footage to determine if a fall requires external medical attention, or if it can be safely handled on-site. This has resulted in fewer hospital trips, reducing the strain on both residents and caregivers and their resources both time-wise and monetarily.

Accurate Analysis of the Root Cause

Another notable benefit has been the ability to perform accurate root cause analysis. By reviewing video footage of each fall, caregivers can identify the specific circumstances that led to the incident and make changes to prevent similar events in the future.

This ability to address the underlying causes of falls has greatly improved the safety and well-being of residents at Azalee.

Additional Benefits:

Voxela's VCare solution brought additional, unexpected benefits to Azalee, particularly through remote night-time monitoring. Caregivers could now check on residents without entering rooms and disturbing their sleep, enhancing comfort and safety. This also reduced the caregivers' workload, allowing them to monitor multiple residents efficiently.

Traditionally, caregivers performed night-time room checks by entering each resident's room and turning on the lights, often disturbing residents' sleep. With Voxela's live view feature, caregivers can now monitor residents remotely, entering rooms only when necessary. This has led to more restful sleep for residents and more efficient use of caregiver resources and attention

Future Plans for Voxela's Vision:

Voxela is committed to continuously improving its AI technology. The company regularly releases software updates to enhance user experience, increase security, and introduce new features.

For example, improvements to the live stream feature have made it easier for caregivers to monitor residents in real-time without experiencing lag or interruptions.

Looking to the future, Voxela plans to expand the system's capabilities to include fall prevention. By analyzing residents' movements and walking patterns over time, the system will eventually be able to predict when a resident is at high risk of falling, allowing caregivers to intervene before an incident occurs. This capability will greatly improve the future of fall care.

Conclusion:

Azalee's adoption of Voxela's VCare is a testament to its success. The numbers speak for themselves and set a precedent for the future of AI's integration with healthcare. VCare seamlessly personalizes care and provides a cost-effective solution to an ongoing problem.

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With VCare, we've been able to review falls and take appropriate actions to resolve them effectively. It's made a big difference in how we explain incidents to residents' families. We can now provide precise explanations without guessing, which has reduced the burden on our caregivers. This clarity has not only improved communication with families but also helped our caregiver team share experiences and work more cohesively.

-Facility Leader at Azalee

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Would you like to explore the fall reduction and prevention strategy for your residents ?

Let us know.

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