

Case Study

Social robot ElliQ alleviates loneliness among elderly

Goal

As the world's population ages faster than ever before, half of all elderly adults living alone report suffering from loneliness. Intuition Robotics is using artificial intelligence, machine learning, and cloud robotics to power ElliQ – a social robot designed to encourage an active and engaged lifestyle.

Solution

ElliQ is an engaging robotic companion that learns its owner's behavior patterns to proactively suggest activities, play music, videos, and ebooks, and connect to family and friends through social media. To deliver the required performance, Intuition Robotics used Arm-based technology in the Qualcomm Snapdragon 820 system on a chip, with machine learning functionality enhanced by an accelerator.

Benefits

- Uses AI to learn owner preferences, behavior, and personality.
- Instantly connects to digital content and manages social media interactions.
- Proactively monitors user wellness through cognitive computing.
- Tracks the home environment and alerts to possible issues.

AI Brings Personality and Resourcefulness to Autonomous Companion Robot

Loneliness is an increasing problem amongst the world's aging population, and many senior citizens feel intimidated by the technology that could provide a vital connection. Even though 90 percent of seniors say they'd prefer to age in their own homes, half of those living alone report said they felt isolated. And less than a third owned a cell phone and engaged with social media.

The medical community has long recognized that loneliness contributes to advanced dementia, depression, and early mortality, while an active aging lifestyle can, according to some studies, reduce the risk of dementia by about 35

percent. A healthy active lifestyle has also shown to speed healing significantly, and generally lead to a higher quality of life.



Intuition Robotics is harnessing the power of technology to overcome the digital divide that's changing the way new and old generations communicate, and helping the elderly stay active and engaged. Its social robot, ElliQ, is an autonomous active aging companion that uses machine learning to understand the preferences, behavior and personality of her owner to promote an active, healthy lifestyle.

"ElliQ lets older adults use a vast array of technologies including video chats, online games, and social media to connect with families and friends," explains Dor Skuler, CEO and co-founder. "She's emotive and crosses digital barriers in a way that is natural, communicative, and intuitive. Users don't have to understand technology to engage with her."

Machine Learning Encourages Interactions

ElliQ needs leading-edge processing power to handle the machine learning required to get to know her owner, deal with family recommendations, proactively suggest activities, monitor wellness and track the home environment.

"We chose a Qualcomm Snapdragon 820 system on a chip based on Arm technology to deliver the processing power we needed for ElliQ's level of intelligence," Skuler says. "Thanks to Arm's rich ecosystem of partners, we were able to team up with Brodmann17 to speed up her computer vision capabilities."

The Qualcomm Snapdragon 820 mobile platform uses Arm technology to offer superior connectivity, graphics, and photography, as well as power and battery efficiency. Her body language conveys emotion with sounds, lights and images, and a speech interface that makes her easily understood.

"We use a lot of cloud services for features such as speech to text and image recognition. Technologies made available through the Arm ecosystem have helped us achieve quick and easy access to these services."

Connectivity Drives Higher Engagement

As a result of learnings from interactions, ElliQ knows when to connect older adults to digital content such as TED talks, music, or audiobooks. She may recommend activities such as taking a walk after extensive television watching or remind the user about an upcoming appointment. Or she may message family and friends to share new photos.

"We've used the best technology available to overcome gaps created by the generational digital divide," Skuler adds. "Arm-based technology lets ElliQ use machine learning to adapt herself to the specific individual in front of her. She's simply the gizmo that gets you."



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