# Lighthouse is taking on Amazon and Nest with its new AI-powered security camera

Lighthouse AI, an artificial intelligence startup founded by self-driving car and computer-vision experts, today announced the general availability of its debut consumer product: the Lighthouse security camera. The device, which was unveiled in May 2017, is aimed at the crowd of gadget enthusiasts and home owners who may be interested in or already own a similar product from Amazon or Google-owned Nest. The brains behind Lighthouse, however, think this product has more smarts, specifically around the implementation of AI and the kind of computer-vision prowess that helps software see and understand the world.

The camera, which goes on sale from Lighthouse's website and on Amazon today for $299, is effectively an all-in-one AI system for your home. It records a 1080p, 24-hour feed and stores it for up to 30 days, but from the moment it's plugged in, the camera also works on recognizing faces and adapting to the series of manual pings you set up in the Lighthouse mobile app. It uses 3D sensors and algorithms trained via machine learning to digest its surroundings, keep track of known faces, and, notably, to differentiate between pets and human beings.

*Lighthouse's camera costs $299.99 and the AI service costs $10 per month*

The manual pings you can set up include prompts for activity, like "tell me if you see anyone you don't recognize when the primary user is out of the house." The pings can also be for the absence of activity, like one for "tell me if you don't see someone enter the home between the hours of 3PM and 5PM." These pings, which send notifications to a user's phone, can

be set up using natural language, involving just a spoken command to the Lighthouse app. The app can also create profiles for other family members and friends, as well as guests like dog walkers, babysitters, or house cleaners, who the camera can learn to recognize and omit from activity alerts. Lighthouse is selling the AI companion service for $10 per month, or a one-time $200 fee for lifetime access.

*The Verge* has a Lighthouse camera set up in its San Francisco office, and we'll be spending some more time with it this week and next in a variety of different environments before publishing an official review of the product.

Granted, these AI features in Lighthouse are very similar to what Nest does with its familiar face-detection system, which now uses the same facial recognition algorithms Google uses to identify people in photos. Like Lighthouse's camera, the Nest Cam IQ can also exclude motion from cars and pets. Nest devices too can be trained to identify family members, friends, and neighbors, and alert you of suspicious activity. But where Nest has treated the growing sophistication and importance of AI as an additional feature to one of its many smart home products, Lighthouse says AI is the foundation of everything it's doing as a company.

The startup, backed by Android co-founder Andy Rubin's Playground Ventures fund, certainly has the talent to back up its claims. Lighthouse CEO and co-founder Alex Teichman worked for seven years at Stanford, primarily with self-driving-car guru Sebastian Thrun, prior to Thrun joining Google. Thrun, who is co-founder of the X lab at Alphabet, helmed a team at Google that eventually became the Waymo autonomous vehicle unit.

*Image: Lighthouse*

Teichman worked on Thrun's team at Stanford, researching and improving the computer-vision methods that allowed Stanford's autonomous vehicle prototypes to compete in the landmark DARPA Challenge that helped kickstart the self-driving car revolution. Teichman's co-founder, Hendrik Dahlkamp, sold his street-mapping startup Vutool to Google in 2007, and then he helped transform it into the product we now call Street View. Both co-founders have extensive experience working with AI and computer vision specifically, and they've hired experts in natural language processing and other AI fields to build out the team based in Palo Alto, California.

In an interview with *The Verge*, Teichman describes Lighthouse not so much as a camera or even a smart home company, but "really as an AI platform for physical spaces." Teichman describes the earliest prototype of Lighthouse's flagship product as the same type of hardware in Microsoft's first-generation Kinect, but powered by the same vision software he and Dahlkamp built at Google and Stanford. At the time, Teichman was worried about burglary at his home, and he felt he could build a better camera system from scratch than what companies were offering at the time. Over time, after forming a venture with Dahlkamp to explore commercialization the approach, Teichman says he refined the prototype. The duo shifted away from using infrared to 3D sensors that could do depth detection and gather the type of data necessary for object and facial recognition.

*Lighthouse built out its own natural language feature and opted against using Alexa*

"When I talk about the mission of Lighthouse, it's very deliberately worded to be useful and accessible intelligence," Teichman says. "We knew how to make Lighthouse understand who

is who. What we didn’t know and didn’t realize we didn’t know was how to make that information useful and accessible to people.” That’s where the digital assistant features come in. By opening the “ask” tab on the Lighthouse app, users can manually tap pre-written prompts to set up pings or simply talk to the app to achieve the same result.

For a security camera, you don’t need to really worry about anything other than whether it’s actively recording what it sees, Teichman explains. “But once you want to get useful information out of that device, it becomes very hard if you don’t have a natural language understanding system,” he adds. “We wrestled for a long time with what is the right mix of buttons and UI features. It turns out it’s just dramatically better to just have people ask.” So Teichman and his team focused on incorporating natural language, and shied away from simply partnering with an existing company like Amazon and using Alexa, because it meant relying on a third-party product to dictate how the Lighthouse would be used.

Asked whether the growing sophistication of products from Amazon, Google, and others poses a threat, Teichman says he’s not too concerned. After all, Teichman says Lighthouse has worked hard to differentiate its product as an AI-first gadget, not just a sleek device that added AI later on. “It’s kind of obviously the right thing to push AI into these domains,” he says. “We look at other companies in this space, and we see a lot of good camera companies. But we don’t see a lot of good AI companies.”

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