**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

NEC CORPORATION,
 	
       Plaintiff,
 	
v.
 	
YI TECHNOLOGIES, INC.
 	
       Defendant.
	Case No. 2:24-cv-722
	
	JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff NEC Corporation ("NEC"), by and through its undersigned counsel, files this complaint under 35 U.S.C. § 271 against Defendant YI Technologies, Inc., and alleges as follows, upon actual knowledge with respect to itself and its own acts, and upon information and belief as to all other matters.

NATURE OF THE ACTION

1.   This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*

THE PARTIES

2.   Plaintiff NEC Corporation is a corporation organized under the laws of Japan, with its principal place of business at 7-1, Shiba 5-chome Minato-ku, Tokyo 108-8001 Japan.

3.   On information and belief, Defendant YI Technologies, Inc. (including the "Kami" brand) is a corporation organized under the laws of the People's Republic of China, with a principal place of business located at Building 18, Zhangjian Artificial Intelligence Island, 55 Chuanhe Road, Pudong New District, Shanghai, 201203, People's Republic of China. On information and belief,

Defendant may be served through its registered agent, The Company Corporation, located at 251 Little Falls Drive, Wilmington, DE 19808.

JURISDICTION AND VENUE

4.   This Court has subject matter jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States, 35 U.S.C. § 271, *et seq.*

5.   This Court has personal jurisdiction over Defendant pursuant to due process and/or the Texas Long Arm Statute because, *inter alia*, (i) Defendant has done and continues to do business in the United States, including in the State of Texas; (ii) Defendant has committed and continues to commit acts of patent infringement in the United States, including in the State of Texas, including making, using, offering to sell, and/or selling accused products in the United States and Texas, and/or importing accused products into the United States and Texas, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in the United States and Texas, and/or committing at least a portion of any other infringements alleged herein.

6.   In addition, or in the alternative, this Court has personal jurisdiction over Defendant pursuant to Fed. R. Civ. P. 4(k)(2).

7.   Venue is proper in this District as to Defendant. YI Technologies, Inc. is organized under the laws of the People's Republic of China. 28 U.S.C. § 1391(c)(3) provides that "a defendant not resident in the United States may be sued in any judicial district, and the joinder of such a defendant shall be disregarded in determining where the action may be brought with respect to other defendants."

PATENTS-IN-SUIT

8.   The Asserted Patents are U.S. Patent Nos. 11,373,061; 10,223,619; 10,769,468; 10,706,336; 10,970,995; and 11,537,814 (collectively, the "Asserted Patents").

9.   U.S. Patent No. 11,373,061 ("the '061 Patent," attached hereto at Exhibit 1) duly issued on June 28, 2022, and is entitled "Object Detection Device, Object Detection Method, and Recording Medium." The '061 Patent claims foreign priority to JP 2015-055926, filed on March 19, 2015. NEC is the owner by assignment of the '061 Patent and possesses all rights under the '061 Patent, including the exclusive right to recover for past and future infringement.

10.   U.S. Patent No. 10,223,619 ("the '619 Patent," attached hereto at Exhibit 2) duly issued on March 5, 2019 and is entitled, "Video Monitoring Apparatus, Control Apparatus, Control Method, and Non-Transitory Readable Storage Medium." The '619 Patent claims foreign priority to JP 2014-187186, filed on September 16, 2014. NEC is the owner by assignment of the '619 Patent and possesses all rights under the '619 Patent, including the exclusive right to recover for past and future infringement.

11.   U.S. Patent No. 10,769,468 ("the '468 Patent," attached hereto at Exhibit 3) duly issued on September 8, 2020 and is entitled, "Mobile Surveillance Apparatus, Program, and Control Method." The '468 Patent claims priority to PCT No. PCT/JP2015/059747, filed on March 27, 2015. NEC is the owner by assignment of the '468 Patent and possesses all rights under the '468 Patent, including the exclusive right to recover for past and future infringement.

12.   U.S. Patent No. 10,706,336 ("the '336 Patent," attached hereto as Exhibit 4) duly issued on July 7, 2020 and is entitled, "Recognition in Unlabeled Videos with Domain Adversarial Learning and Knowledge Distillation." The '336 Patent claims priority to U.S. Provisional Application No. 62/472,896, filed on March 17, 2017. NEC is the owner by assignment of the '336

Patent and possess all rights under the '336 Patent, including the exclusive right to recover for past and future infringement.

13.   U.S. Patent No. 10,970,995 ("the '995 Patent," attached hereto at Exhibit 5) duly issued on April 6, 2021 and is entitled, "System for Monitoring Event Related Data." The '995 Patent claims foreign priority to SG 10201501222X, filed on February 17, 2015. NEC is the owner by assignment of the '995 Patent and possesses all rights under the '995 Patent, including the exclusive right to recover for past and future infringement.

14.   U.S. Patent no. 11,537,814 ("the '814 Patent," attached hereto at Exhibit 6) duly issued on December 27, 2022 and is entitled, "Data Providing System and Data Collection System." The '814 Patent claims priority to PCT No. PCT/JP2018/017609, filed on May 7, 2018. NEC is the owner by assignment of the '814 Patent and possesses all rights under the '814 Patent, including the exclusive right to recover for past and future infringement.

BACKGROUND

15.   Founded in 1899 and based in Tokyo, Japan, NEC (Nippon Electric Company) has throughout its 120-year history been a world leader and innovator across a variety of technical industries, including in electronic devices, computing, computer displays, semiconductors, mobile phones and communications, and most recently, software and artificial intelligence solutions. Over the years, NEC has expanded significant resources on research, development, and innovation, and on capturing and protecting the fruits of those efforts in patent applications filed around the world. The patents-in-suit, which provide improved surveillance technology, were born from this history of innovation.

16.   In the realm of surveillance and camera technology, NEC has made remarkable strides, particularly in the development of advanced biometric recognition systems. NEC's biometric solutions leverage cutting-edge technologies that have been consistently ranked very

highly in global benchmark tests by the U.S. National Institute of Standards and Technology (NIST):

See https://jpn.nec.com/biometrics/face/history.html.

See https://www.nec.com/en/press/202109/global_20210922_02.html.

17.   NEC has been researching and perfecting some of these systems since 1971, with the goal of enhancing security, safety, and convenience across various sectors, including public infrastructure, transportation, and law enforcement. To date, NEC has deployed over 1,000 biometric systems in over seventy countries and regions. *See* https://www.nec.com/en/global/solutions/biometrics/index.html; *see also* https://www.annualreports.com/HostedData/AnnualReports/PDF/OTC_NIPNF_2023.pdf.

18.   NEC is committed to creating a safer and more secure society through its investment in facial recognition technology, which it has developed through more than thirty years

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of continuous research. *See* https://www.nec.com/en/global/solutions/biometrics/index.html. For example, NEC seeks to enhance customer privacy and security by using facial recognition technology to prevent risks such as impersonation and fraud. Right now, many of NEC's facial recognition technology solutions are being implemented for first-time use in new areas and venues worldwide, such as end-to-end airport travel experiences in the U.S. and EU Summit Security in Europe. Frost & Sullivan consistently recognizes NEC as a leader in Biometrics technology in recognition of its leading position in the industry and foresight in innovating and developing future face recognition biometric solutions that maximize customer value and experience. *See* https://www.nec.com/en/press/201905/global_20190529_01.html;   *see   also* https://www.nec.com/en/press/202302/global_20230217_01.html.

19.   NEC is also committed to using its facial recognition systems to increase public and national security. For example, NEC's facial recognition technology solutions have been utilized for criminal investigations, national ID systems, and immigration control.

20.   NEC's technological achievements in surveillance extend beyond biometric recognition. In particular, NEC aims to develop artificial intelligence (AI) that is truly beneficial to its customers and society through its development of sophisticated camera systems that incorporate AI machine learning algorithms. These smart camera systems are capable of performing real-time analysis of image data, which is critical for applications such as traffic management, crowd control, and incident detection. For example, NEC has created a road surface inspection system, which implements an AI that analyzes image data captured by drive recorders to detect road surface disrepair. This system enhances preventive road maintenance to greatly improve public safety and infrastructure. By integrating AI with camera technology that not only

captures but also analyzes and responds to image data in real time, NEC has developed a variety of proprietary technologies to support social infrastructure and mission-critical systems.

21.   The global recognition of NEC's technological contributions is reflected in its extensive patent portfolio. NEC has cumulatively held the highest number of international patent applications in face recognition, biometrics, video analytics, and AI in the world since 2001. NEC's patent portfolios related to these core technologies have earned it recognition as a Clarivate Top 100 Global Innovator for thirteen consecutive years. https://www.nec.com/en/press/202403/global_20240307_01.html.

22.   NEC prides itself on its strong intellectual property strategy, which is centered around the protection and utilization of its innovations on a global scale. NEC proactively licenses patents and other intellectual property that contribute to societal development and market expansion. In collaboration with both its Intellectual Property Management Division and business units, NEC strategically selects intellectual property for licensing, guided by studying and analyzing the latest global societal trends and future forecasts. This strategy allows NEC to maintain its competitive edge and reputation as a global leader in technology.

23.   As part of NEC's intellectual property strategy, NEC has recently embraced an open innovation approach by engaging with external business partners, such as start-up corporations, to promote R&D co-creation and build upon its robust patent portfolio.

24.   NEC first sent a letter to the legal department of YI Technologies Inc. on June 3, 2024, offering to license patents currently owned by NEC, including the '061, '619, '468, '336, and '995 Patents. The correspondence included a list of NEC patents offered for licensing and identified YI products, such as the YI Pro 2, the YI Home 3 Camera, the YI Outdoor Camera, the YI Dome 1080p Camera, the YI Dome X Camera, the YI Dome Guard 2K, the YI Dome U Camera,

the YI Dome U Pro, the YI Outdoor 1080P PTZ Camera, the Kami Indoor Camera, the Kami Outdoor Security Camera, the Kami Wire-Free Outdoor Camera, the Kami mini, the Kami Doorbell Camera, other YI cameras with similar functionalities, the YI Home App, the Kami Pro Security system, that were covered by claims of the offered patents.

25.   Despite receipt of NEC's letter, Defendant has not engaged in discussions or negotiations with NEC. Defendant has been operating and continue to operate without a license to NEC's patents.

<div align="center"><u>COUNT 1 – INFRINGEMENT OF U.S. PATENT NO. 11,373,061</u></div>

26.   NEC incorporates paragraphs 1-25 above by reference.

27.   The '061 Patent is directed to object detection and generation of teacher data based on user input. For example, the '061 Patent discloses detecting an object from an image; controlling to display a first region of the detected object on a display device; receiving, through an input device, an input defining a second region in the image, the input being performed by indicating at least two points in the image; and generating teacher data based on the second region.

28.   The '061 Patent explains that, at the time of its priority date, available techniques for creating teacher data lacked efficiency and quality. '061 Patent at 2:14-30. The available techniques either relied heavily on multiple operational steps by a user and classification, or sacrificed accuracy for ease. *Id.*

29.   The inventors of the '061 Patent provided a solution to these problems by providing an object detection method that "efficiently creates good-quality teacher data." *Id.* at 2:27-30. More specifically, the claimed invention includes at least one processor configured to execute the instructions to detect an object from an image and control a display device to display a first region of the detected object. As such, the claimed invention can receive an input performed by indicating

at least two points in a region that define a second region in the image, and thereby generate teacher data based on the second region.

30.   Defendant has directly infringed one or more claims of the '061 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through its sale, offer for sale, manufacture, use, or import of its surveillance products with object detection (*i.e.*¸ "Smart Detection"), adjustable zones (*i.e.*, activity detection zone(s) and/or exclusion zones), and/or products that "Help Improve Smart Detection Accuracy," including at least the YI Pro 2; YI Home 3 Camera; YI Outdoor 1080P PTZ Camera, Kami Outdoor Security Camera; Kami Wire-Free Outdoor Camera; Kami mini, Kami Senior Care Camera; KamiCloud; Fall Detect by KamiCare; and any other YI or Kami server (collectively, "the Accused '061 YI Products"). NEC reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the Accused '061 YI Products are identified to describe the Defendant's infringement and in no way limit the discovery and infringement allegations against Defendant concerning other devices that incorporate the same or reasonably similar functionalities.

31.   Each of the Accused '061 YI Products, alone or in combination with the YI Home Application,[1] includes memory storing instructions and at least one processor configured to execute the instructions to detect an object from an image. Each of the Accused '061 YI Products, alone or in combination with the YI Home Application, also control a display device to display a first region of the detected object.

32.   Each of the Accused '061 YI Products, alone or in combination with the YI Home Application, receive, through an input device, an input defining a second region in the image, the

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[1] References herein to the "YI Home Application" interchangeably allege infringement by any additional compatible applications including but not limited to the "YI IoT," "Kami Home," and "KamiCare" Applications.

input being performed by indicating at least two points in the image. Further, each of the Accused '061 YI Products, alone or in combination with the YI Home Application, generates teacher data based on the second region.

33.   The following excerpts from YI's websites provide non-limiting examples of the Accused '061 YI Products infringing at least claim 1 of the '061 Patent:
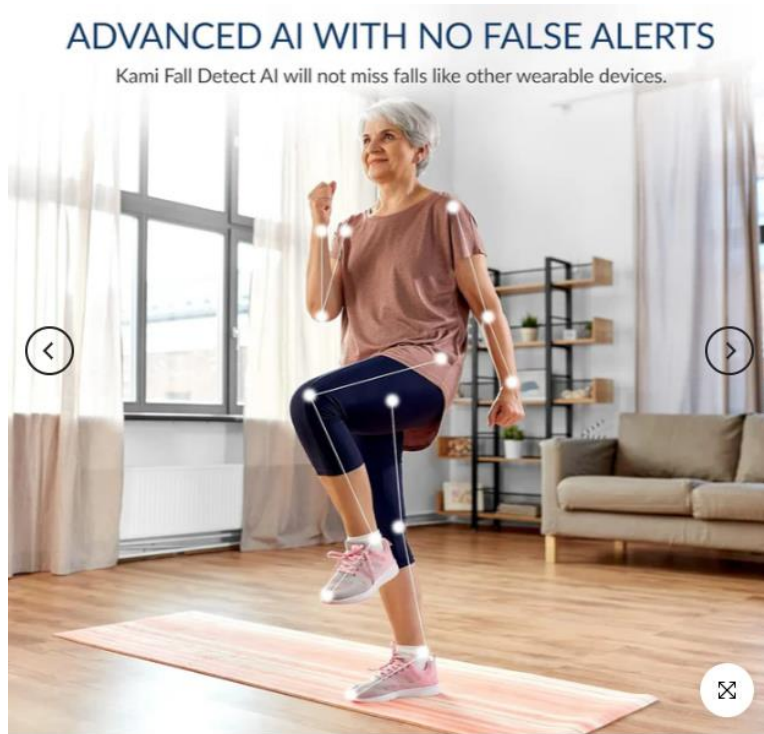

https://www.yitechnology.com/yihome/.

See Every Action, Every Second of it!

Whether you need to check on your kids, pets, or elderly parents, your camera will record every motion detected until it stops. No storage limit, no cool-down period, any time of the day!

- Flexible & affordable plans.
- Connect up to 5 cameras in a single Cloud plan.
- Store alert recordings up to 30 days of video history.
- Automated AI alerts.
- Free to create a time-lapse clip.
- Other features and unlock your peace of mind!

https://www.yitechnology.com/yi-home-2k-pro/.

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https://store.kamihome.com/products/fall-detect-sensor-by-kamicare?variant=45142227681522.

Unlock Face Detection feature on your Kami Doorbell Camera

Kami Shield cloud service will enable you to easily find videos of your loved ones using the intuitive face search feature, directly on your smartphone. Every Face detected will be stored in Face Album, and you will receive an alert that you can record 24/7 with Cloud Service.

https://www.yitechnology.com/kami-doorbell.

34.   The foregoing features and capabilities of the Accused '061 YI Products and Defendant's description and/or demonstration thereof, including in user manuals and advertising, reflect Defendant's direct infringement by satisfying every element of at least claim 1 of the '061 Patent, under 35 U.S.C. § 271(a).

35.   Defendant has indirectly infringed at least claim 1 of the '061 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the Accused '061 YI Products. Defendant's customers who purchase devices and components thereof and operate such devices and components in accordance with Defendant's instructions directly infringe one or more claims of the '061 Patent in violation of 35 U.S.C. § 271. Defendant instructs its customers through at least user manuals or websites, such as those located at: https://www.yitechnology.com/yihome; https://www2.yitechnology.com/support/faq/id/17/oid/h1; https://www.yitechnology.com/kami; https://www.yitechnology.com/kami-doorbell; https://www.youtube.com/@YICamera; https://store.kamihome.com/products/fall-detect-sensor-by-kamicare?variant=45142227681522; https://www.youtube.com/watch?v=mJlWTKeB7ic; https://www.youtube.com/@KamiHome.

36.   For example, as shown above, Defendant instructs its customers to use "Advanced Human Detection," stating "AI-powered Human Detection is more robust than traditional PIR or

motion detection. Featuring built-in new sensors and highly accurate detection technology, it can reduce false alarms caused by plants, animals, or small insects." *See* https://www.yitechnology.com/yi-home-2k-pro; *see also* https://www.yitechnology.com/kami-doorbell/ ("With built-in highly accurate PIR motion and AI human detection, the Kami Doorbell video camera sends notifications to your smartphone alerting whenever a human figure passes by your door and triggers the smart sensor.").

37.   Further, Defendant indirectly infringes by inducing and/or contributing to infringement by making available tutorial videos on its official YouTube channels encouraging customers to infringe by setting activity detection zones and/or exclusion zones. *See* https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome.

38.   Defendant is thereby liable for infringement of the '061 Patent pursuant to 35 U.S.C. § 271(b).

39.   Defendant has indirectly infringed at least claim 1 of the '061 Patent by, among other things, contributing to the direct infringement of others, including customers of the Accused '061 YI Products by making, offering to sell, or selling, in the United States, or importing a component of a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '061 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

40.   For example, the Accused '061 YI Products include at least one component to detect an object and generate teacher data. This is a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such component is a material part of the invention and upon information and belief is not a staple article

or commodity of commerce suitable for substantial non-infringing use. Thus, Defendant is liable for infringement of the '061 Patent pursuant to 35 U.S.C. § 271(c).

41.   Defendant has been on notice of the '061 Patent since at least June 3, 2024. By the time of trial, Defendant will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the '061 Patent.

42.   Defendant undertook and continues its infringing actions despite an objectively high likelihood that such activities infringed the '061 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least June 3, 2024, Defendant has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '061 Patent, and that the '061 Patent is valid. On information and belief, Defendant cannot reasonably, subjectively believe that its actions do not constitute infringement of the '061 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Defendant has continued its infringing activities. As such, Defendant willfully infringes the '061 Patent.

43.   NEC has been damaged by Defendant's infringement of the '061 Patent.

COUNT 2 – INFRINGEMENT OF U.S. PATENT NO. 10,223,619

44.   NEC incorporates paragraphs 1-43 above by reference.

45.   The '619 Patent is directed to video analysis technology for providing a notification when conditions are satisfied. For example, the '619 Patent discloses a first storage which stores a first condition for detecting a first event from a video; a second storage which stores a second condition for detecting a second event from the video; an output circuit which outputs a signal indicating that a logical relationship designated in advance by the first event and the second event

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is satisfied; a first input circuit which receives an input of the first condition; a second input circuit

which receives an input of the second condition; and a conditional operator input circuit which

receives an input of a conditional operator indicating the logical relationship.

46. The '619 Patent explains that, at the time of its priority date, available techniques

for video analysis were unable to detect certain behavior. '619 Patent at 1:19-33. Conventional

systems lacked video analysis methods that could detect such behaviors. *Id*. Instead, conventional

systems were limited to detection of simple behaviors, such as entering a prohibited area. *Id*. at

1:64-67.

47. The '619 Patent explains how to detect more complicated behaviors. *See*, *e.g.*, *id*.

at 1:67-2:2. More specifically, the claimed invention includes a first storage which stores a first

condition for detecting a first event from a video and a second storage which stores a second

condition for detecting a second event from the video. Thereby, an output circuit may output a

signal indicating that a logical relationship designated in advance by the first event and the second

event is satisfied. A first input circuit receives an input of the first condition and a second input

circuit receives an input of the second condition. These inputs are sent to a conditional operator

input circuit which may indicate a logical relationship between the two events.

48. Defendant has directly infringed one or more claims of the '619 Patent in this

district and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of

equivalents, by or through its sale, offer for sale, manufacture, use, or import of its products with

Smart Detection or Facial Recognition, including at least the Kami Doorbell Camera; YI Pro 2; YI

Home 3 Camera; YI Outdoor Camera; YI Dome 1080p Camera; YI Dome X Camera; YI Dome

Guard 2K; YI Dome U Camera; YI Dome U Pro; YI Outdoor 1080P PTZ Camera; Kami Indoor

Camera; Kami Outdoor Security Camera; Kami Wire-Free Outdoor Camera; Kami mini; Kami

Senior Care Camera; KamiCloud; Fall Detect by KamiCare; and any other YI or Kami server (collectively, "the Accused '619 YI Products"). NEC reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the Accused '619 YI Products are identified to describe the Defendant's infringement and in no way limit the discovery and infringement allegations against Defendant concerning other devices that incorporate the same or reasonably similar functionalities.

49.   Each of the Accused '619 YI Products, alone or in combination with the YI Home Application, includes a first storage which stores a first condition for detecting a first event from a video and a second storage which stores a second condition for detecting a second event from the video. Each of the Accused '619 YI Products, alone or in combination with the YI Home Application, also includes an output circuit which outputs a signal indicating that a logical relationship designated in advance by the first event and the second event is satisfied.

50.   Each of the Accused '619 YI Products, alone or in combination with the YI Home Application, further includes a first input circuit which receives an input of the first condition, a second input circuit which receives an input of the second condition, and a conditional operator input circuit which receives an input of a conditional operator indicating the logical relationship.

51.   The following excerpts from YI's website and product listings provide non-limiting examples of the Accused YI '619 Products infringing at least claim 1 of the '619 Patent:

Smart Detection Settings

These are the settings that allow the camera to notify you when it detects motion. The parameters can be adjusted based on your preference and the environment.
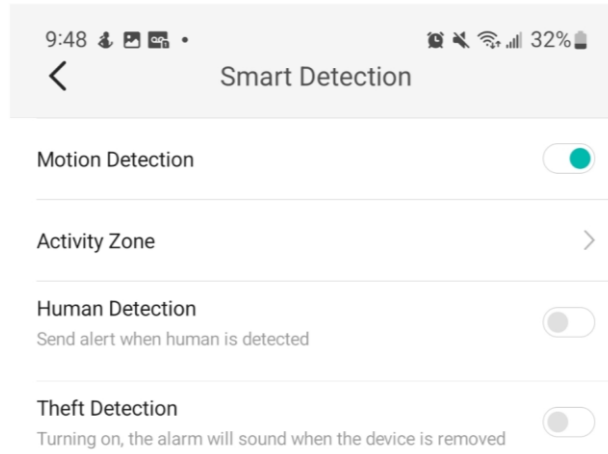
Activity Zone— Preset designated areas where the camera can pick up motion. These preset areas are located near the bottom of the feed where most activity is caught by the camera. This filter allows you to select which preset areas should detect motion. This helps reduce unwanted or unnecessary motion-triggered events (like busy streets).
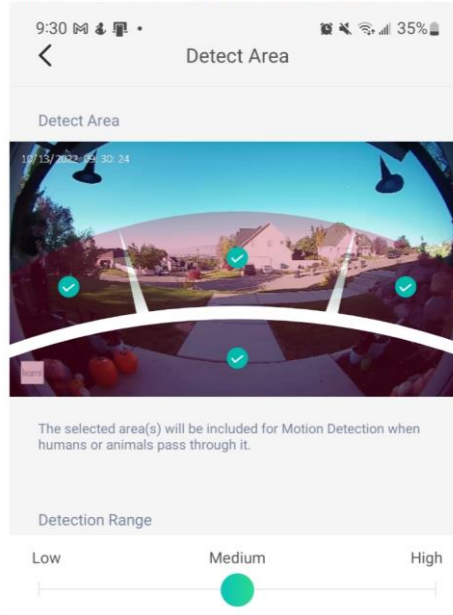
https://support.covesmart.com/t/35h767c/kami-doorbell-motion-detection-best-practices.

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https://www.amazon.com/dp/B0BS5PY1HN/ref=twister_B09N72XPK3?_encoding=UTF8&th=1.

https://help.yitechnology.com/hc/en-us/articles/20554614234651-How-to-Setup-Activity-Detection-Zone.

ii Human Detection—Uses AI to distinguish between human shapes and non-human objects. When enabled, the camera will only be triggered by objects of human size and shape.

https://support.covesmart.com/t/35h767c/kami-doorbell-motion-detection-best-practices.

Advanced Human Detection

With built-in highly accurate PIR motion and AI human detection, the Kami Doorbell video camera sends notifications to your smartphone alerting whenever a human figure passes by your door and triggers the smart sensor.

AI Human Detection sensor reduces false alarms caused by plants, animals, or small insects, allowing you to focus on the things that matter most to you.

https://kamihome.com/kami-doorbell/.

	Free Plan Free for YI and Kami devices	kami shield Save $58 for Annual Fee
Live View	✓	✓
Notification Alerts	✓	✓
Cloud Recording History		up to 30 days
Motion Detection	✓	✓
Person Detection	✓	✓
Face Detection [1]		✓
Animal Detection		✓
Vehicle Detection		✓
Multi-Live View		✓

https://kamihome.com/kami-doorbell.

https://youtu.be/UMyxXONQaS0?si=ZrNKGNR7p8J7-lg (at 1:06).

Unlock Face Detection feature on your Kami Doorbell Camera

Kami Shield cloud service will enable you to easily find videos of your loved ones using the intuitive face search feature, directly on your smartphone. Every Face detected will be stored in Face Album, and you will receive an alert that you can record 24/7 with Cloud Service.

https://www.yitechnology.com/kami-doorbell/.

Edge AI Facial Recognition Technology

Before we get into that, let us explain what you get to enjoy with the facial recognition feature! Facial recognition doesn't only differentiate a person from another object as face detection does. It can also recognize who that person is, specifically, provided that a tag was assigned to that face earlier. Next, Kami Doorbell recognizes a visitor's face and sends an instant alert to notify the user. So, you can save your family member's or a friend's "face" in the device's video history to detect a familiar face in the future. Cool, right? Kami Doorbell can also effectively avoid "false positives" caused by flying insects, pets, and light changes. So, you are not disturbed unnecessarily, all thanks to its reliable edge computing AI motion sensor.

https://news.yitechnology.com/news/introducing-kami-doorbell-camera/.

52.   The forgoing features and capabilities of the Accused '619 YI Products, and Defendant's description and/or demonstration thereof, including user manuals and advertising, reflect Defendant's direct infringement by satisfying every element of at least claim 1 of the '619 Patent, under 35 U.S.C. § 271(a).

53.   Defendant has indirectly infringed at least claim 1 of the '619 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the Accused '619 YI Products. Defendant's customers who purchase devices and components thereof and operate such devices and components in accordance with Defendant's instructions directly infringe one or more claims of the '619 Patent in violation of 35 U.S.C. § 271. Defendant instructs its customers through at least user manuals, websites, or videos, such as those located at: https://help.yitechnology.com/hc/en-us/articles/20554614234651-How-to-Setup-Activity-Detection-Zone;

https://support.covesmart.com/t/35h767c/kami-doorbell-motion-detection-best-practices;

https://kamihome.com/kami-doorbell/;   https://www.yitechnology.com/kami-doorbell/;

https://www.youtube.com/watch?v=UMyxXONQaS0.

54.   Further, Defendant indirectly infringes by inducing and/or contributing to infringement by making available tutorial videos on its official YouTube channels encouraging customers to infringe by implementing video monitoring, including Smart Detection and/or Facial Recognition.   *See*   https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome.

55.   Defendant is therefore liable for infringement of the '619 Patent pursuant to 35 U.S.C. § 271(b).

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56.   Defendant has indirectly infringed at least claim 1 of the '619 Patent by, among other things, contributing to the direct infringement of others, including customers of the Accused '619 YI Products by making, offering to sell, or selling, in the United States, or importing a component of a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '619 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

57.   For example, the Accused '619 YI Products include at least one component to output a signal indicating that a logical relationship designated in advance by the first event and the second event is satisfied. This is a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such component is a material part of the invention and upon information and belief is not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Defendant is liable for infringement of the '619 Patent pursuant to 35 U.S.C. § 271(c).

58.   Defendant has been on notice of the '619 Patent since at least June 3, 2024. By the time of trial, Defendant will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the '619 Patent.

59.   Defendant undertook and continues its infringing actions despite an objectively high likelihood that such activities infringed the '619 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least June 3, 2024, Defendant has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '619 Patent, and that the '619 Patent is valid. On information and belief, Defendant could not reasonably, subjectively believe that its actions do not constitute infringement of the '619

Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Defendant has continued its infringing activities. As such, Defendant willfully infringes the '619 Patent.

60.   NEC has been damaged by Defendant's infringement of the '619 Patent.

COUNT 3 – INFRINGEMENT OF U.S. PATENT NO. 10,769,468

61.   NEC incorporates paragraphs 1-60 above by reference.

62.   The '468 Patent is directed to control of a surveillance system using a mobile device. For example, the '468 Patent discloses displaying a surveillance image on a touch panel display; performing a first process that is to set an event detection region with respect to the surveillance image or a second process that is to change a display range of the surveillance image, in accordance with a slide operation performed with respect to the surveillance image displayed on the touch panel display; and switching between the first process and the second process when a touch operation is performed at a plurality of places on the touch panel display in a predetermined order.

63.   The '468 Patent is directed to solving problems related to using mobile devices such as smartphones and tablets to perform surveillance. '468 Patent at 1:20-30. Conventional systems at the time of the '468 Patent allowed a user to access a server using such mobile devices to watch video from a surveillance system. *Id.* at 1:29-34. Additionally, conventional systems allowed for setting a surveillance region in a surveillance system. *Id.* at 1:35-41.

64.   The inventors of the '468 Patent describe an improvement to conventional systems at the time, enhancing the operability of using a mobile a surveillance system. *Id.* at 2:9-12. More specifically, the '468 Patent describes using multiple operations or inputs to control different processes. Further, a different operation or input may be implemented to switch between different functions related to controlling a surveillance system.

65.   Defendant has directly infringed one or more claims of the '468 Patent in this district and elsewhere in Texas, including at least claim 9 of the '468 Patent literally and/or under the doctrine of equivalents, by or through its sale, offer for sale, manufacture, use, or import of its products with Smart Detection or Facial Recognition, including at least the Kami Doorbell Camera; YI Pro 2; YI Home 3 Camera; YI Outdoor Camera; YI Dome 1080p Camera; YI Dome X Camera; YI Dome Guard 2K; YI Dome U Camera; YI Dome U Pro; YI Outdoor 1080P PTZ Camera; Kami Indoor Camera; Kami Outdoor Security Camera; Kami Wire-Free Outdoor Camera; Kami mini; Kami Senior Care Camera; KamiCloud; Fall Detect by KamiCare; and any other YI or Kami server (collectively, "the Accused '468 YI Products"). NEC reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the Accused '468 YI Products are identified to describe the Defendant's infringement and in no way limit the discovery and infringement allegations against Defendant concerning other devices that incorporate the same or reasonably similar functionalities.

66.   Each of the Accused '468 YI Products, alone or in combination with the YI Home Application, displays a surveillance image on a touch panel display and performs a first process that is to set an event detection region with respect to the surveillance image or a second process that is to change a display range of the surveillance image, in accordance with a slide operation performed with respect to the surveillance image displayed on the touch panel display.

67.   Each of the Accused '468 YI Products, alone or in combination with the YI Home Application, switches between the first process and the second process when a touch operation is performed at a plurality of places on the touch panel display in a predetermined order.

68.   The following excerpts from YI's websites provide non-limiting examples of the Accused '468 YI Products infringing at least claim 9 of the '468 Patent:
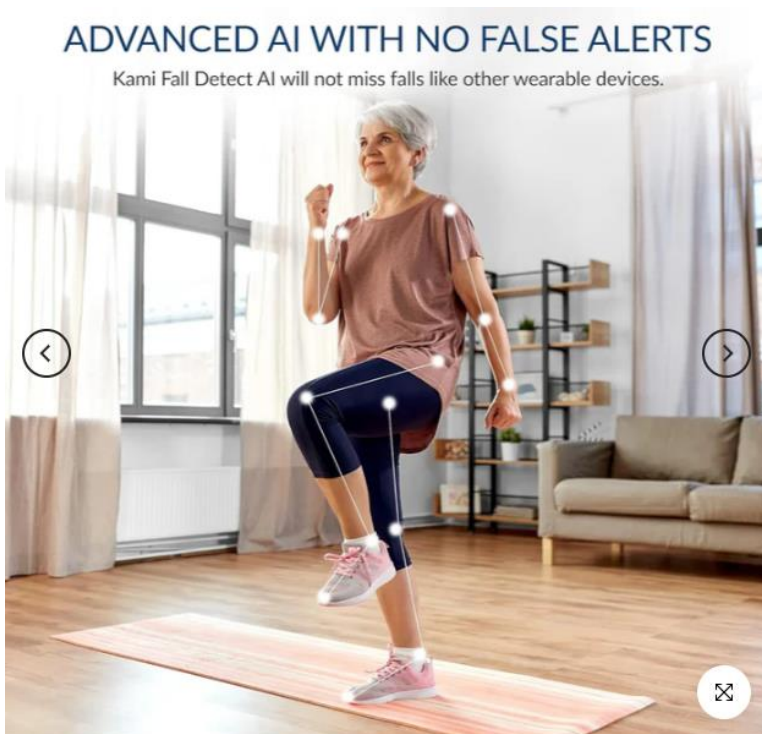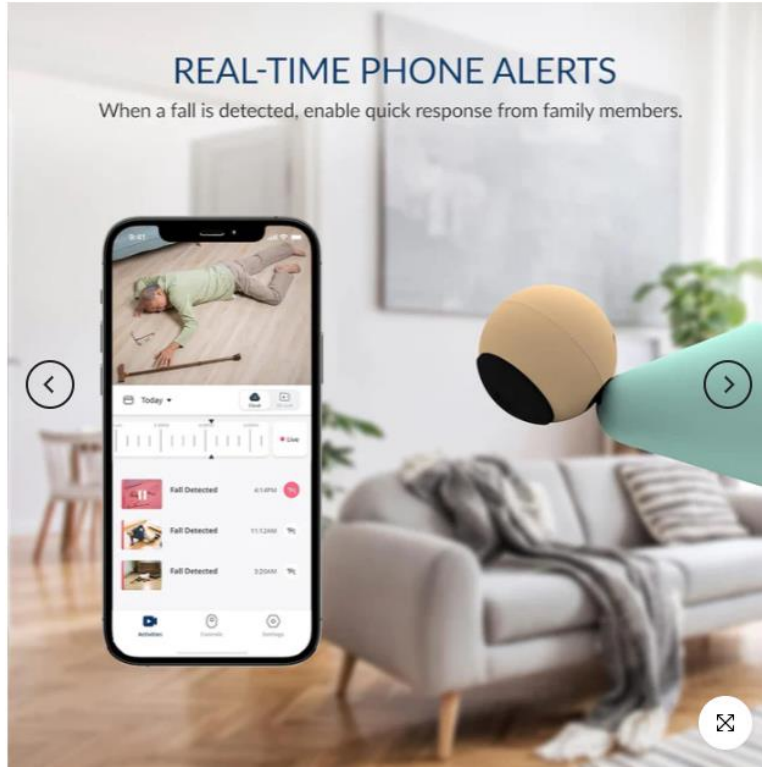
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https://store.kamihome.com/products/fall-detect-sensor-by-kamicare?variant=45142227681522.

How it works

Put sensor in room

Sensor looks for falls 24/7

Automatic fast 911 dispatch
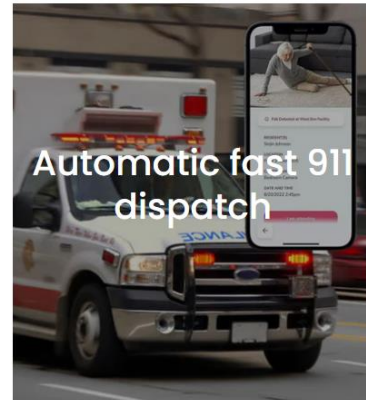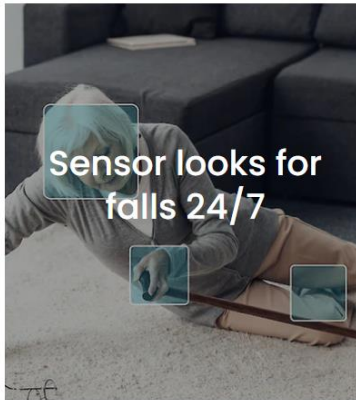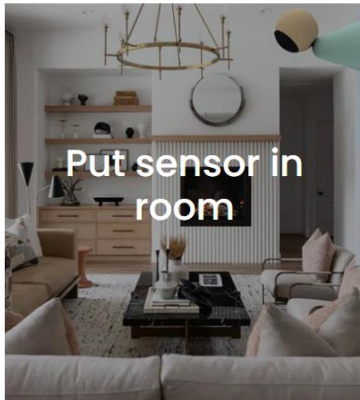
Each 20 seconds a senior suffers a fatal fall

Every second counts when a senior falls

Auto-detect falls day/night

99.9% accurate non-invasive

Privacy guaranteed

Easy set up with app

	KamiCare Sensor
Video review for future fall prevention	✓
Provides exact location of fall within room/floors	✓
Swift 911 help with video evidence	✓
Emergency button press required	Automatic
False alarm rate	Almost none
Does not require wearing device	✓
Does not need constant battery recharging	✓
Device cost	Complimentary

https://store.kamihome.com/pages/kamicare-fall-detection.

Human Detection

Receive notifications on your smartphone as soon as human movement is detected.

Motion Tracking

Don't just detect motion, track it! Follow what's going on at home.

Advanced Human Detection

With built-in high accuracy human detection technology, the camera sends notifications to your smartphone alerting when human movement was detected.

AI-powered Human Detection is more robust than traditional PIR or motion detection. Featuring built-in new sensors and highly accurate detection technology, it can reduce false alarms caused by plants, animals, or small insects.

See Every Action, Every Second of it!

Whether you need to check on your kids, pets, or elderly parents, your camera will record every motion detected until it stops. No storage limit, no cool-down period, any time of the day!

- Flexible & affordable plans.
- Connect up to 5 cameras in a single Cloud plan.
- Store alert recordings up to 30 days of video history.
- Automated AI alerts.
- Free to create a time-lapse clip.
- Other features and unlock your peace of mind!

https://www.yitechnology.com/yi-home-2k-pro/.

Advanced Human Detection

With built-in high accuracy human detection technology, the camera sends notifications to your smartphone alerting when human movement was detected.

AI-powered Human Detection is more robust than traditional PIR or motion detection. Featuring built-in new sensors and highly accurate detection technology, it can reduce false alarms caused by plants, animals, or small insects.

360° Auto Cruise

Advanced motion algorithms detect moving objects and automatically capture and track their movement trajectory. Smart motion tracking keeps up with everything, so you don't have to. The YI Dome Camera U has full 360° PTZ allowing you to see an entire room, from a single location.

Peace of mind is just a tap away.

Whether you're away on vacation or just not home, you can use the YI Home App to keep tabs on your sitter, check in on your pets, or simply monitor your house.

- Instant notifications—anytime, anywhere
- Store up to 30 days of video in the cloud
- Up to 7-day free trial on select Cloud Service plans
- Hold onto your videos longer with our Cloud Service plans
- Designated activity zones in select camera models
- Smarter alerts, not more alerts with advanced AI detection of humans, pets, and abnormal sounds in select camera models

https://kamihome.com/dome-Camera-U.

FALLEN

🔔 Fall Detected at West Elm Facility

RESIDENT(S)
Sinjin Johnson

LOCATION
Floor 2 Room 205

CAMERA NAME
Bedroom Camera

https://store.kamihome.com/pages/kamicare-fall-detection.

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"YI Home Camera 2 – New Features" (available at
https://www.youtube.com/watch?v=ZxV5_5ebCy0).

"Configuring Kami Care Exclusion Zone" (available at
https://www.youtube.com/watch?v=mJlWTKeB7ic).

69.   The foregoing features and capabilities of the Accused '468 YI Products and

Defendant's description and/or demonstration thereof, including in user manuals and advertising,

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reflect Defendant's direct infringement by satisfying every element of at least claim 9 of the '468 Patent, under 35 U.S.C. § 271(a).

70.   Defendant has indirectly infringed at least claim 9 of the '468 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the Accused '468 YI Products. Defendant's customers who purchase devices and components thereof and operate such devices and components in accordance with Defendant's instructions directly infringe one or more claims of the '468 Patent in violation of 35 U.S.C. § 271. Defendant instructs its customers through at least user manuals or websites, such as those located at: https://store.kamihome.com/products/fall-detect-sensor-by-kamicare?variant=45142227681522;

https://store.kamihome.com/pages/kamicare-fall-detection;   https://www.yitechnology.com/yi-home-2k-pro/;   https://kamihome.com/dome-Camera-U;

https://www.youtube.com/watch?v=ZxV5_5ebCy0;

https://www.youtube.com/watch?v=mJlWTKeB7ic.

71.   For example, as shown above, Defendant instructs its customers to set an "Activity Detection Zone" or "Activity Zone Alert" (*see* https://www.youtube.com/watch?v=ZxV5_5ebCy0) enable motion tracking (*see* https://kamihome.com/dome-Camera-U/), or "Configure Kami Care Exclusion Zones." *See* https://www.youtube.com/watch?v=mJlWTKeB7ic.

72.   Further, Defendant indirectly infringes by inducing and/or contributing to infringement by making available tutorial videos on its official YouTube channels encouraging customers to infringe by setting activity detection zones, setting exclusion zones, and/or enabling motion   tracking.   *See*   https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome

73.   Defendant is therefore liable for infringement of the '468 Patent pursuant to 35 U.S.C. § 271(b).

74.   Defendant has indirectly infringed at least claim 9 of the '468 Patent by, among other things, contributing to the direct infringement of others, including customers of the Accused '468 YI Products by making, offering to sell, or selling, in the United States, or importing a component of a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '468 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

75.   For example, the Accused '468 YI Products each include at least one component to switch between the first process and a second process when a touch operation is performed at a plurality of places on a touch panel display in a predetermined order. This is a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such component is a material part of the invention and upon information and belief is not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Defendant is liable for infringement of the '468 Patent pursuant to 35 U.S.C. § 271(c).

76.   Defendant has been on notice of the '468 Patent since at least June 3, 2024. By the time of trial, Defendant will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 9 of the '468 Patent.

77.   Defendant undertook and continues its infringing actions despite an objectively high likelihood that such activities infringed the '468 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least June 3, 2024, Defendant has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement

of the '468 Patent, and that the '468 Patent is valid. On information and belief, Defendant could not reasonably, subjectively believe that its actions do not constitute infringement of the '468 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Defendant has continued its infringing activities. As such, Defendant willfully infringes the '468 Patent.

78.   NEC has been damaged by Defendant's infringement of the '468 Patent.

COUNT 4 – INFRINGEMENT OF U.S. PATENT NO. 10,706,336

79.   NEC incorporates paragraphs 1-78 above by reference.

80.   The '336 Patent is directed to an object recognition system. For example, the '336 Patent discloses a video capture device configured to capture a video sequence formed from a set of unlabeled testing video frames, the video sequence including one or more objects to be recognized; a processor configured to pre-train a recognition engine formed from a reference set of convolutional neural networks (CNNs) on a still image domain that includes a set of labeled training still image frames; adapt the recognition engine to a video domain to form an adapted recognition engine, by applying a non-reference set of CNNs to a set of domains that include the still image domain, a synthetically degraded image domain, and the video domain, wherein the synthetically degraded image domain includes labeled synthetically degraded versions of the labeled training still image frames included in the still image domain, and wherein the video domain includes random unlabeled training video frames; and recognize, using the adapted recognition engine, at least one of the objects in the video sequence to obtain a set of recognized objects; and a display device configured to display the set of recognized objects to a user.

81.   The '336 Patent explains that it resolves problems with recognition of objects in unlabeled videos. *See* '336 Patent at 1:30-42. Accordingly, the '336 Patent provides a solution for

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object recognition in unlabeled videos with domain adversarial learning and knowledge distillation. *Id.*

82.   Defendant has directly infringed one or more claims of the '336 Patent in this district and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through its sale, offer for sale, manufacture, use, or import of its products with "Advance Human Detection" or "Automated AI alters," including at least the YI Pro 2; YI Home 3 Camera; YI Outdoor Camera; YI Dome 1080p Camera; YI Dome X Camera; YI Dome Guard 2K; YI Dome U Camera; YI Dome U Pro; YI Outdoor 1080P PTZ Camera; Kami Indoor Camera; Kami Outdoor Security Camera; Kami Wire-Free Outdoor Camera; Kami mini; Kami Doorbell Camera; Kami Senior Care Camera; KamiCloud; Fall Detect by KamiCare; and any other YI or Kami server (collectively, "the Accused '336 YI Products"). NEC reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the Accused '336 YI Products are identified to describe the Defendant's infringement and in no way limit the discovery and infringement allegations against Defendant concerning other devices that incorporate the same or reasonably similar functionalities.

83.   Each of the Accused '336 YI Products, alone or in combination with the YI Home Application, includes or acts as a video capture device configured to capture a video sequence formed from a set of unlabeled testing video frames, the video sequence including one or more objects to be recognized. Each of the Accused '336 YI Products, alone or in combination with the YI Home Application, includes a processor configured to pre-train a recognition engine formed from a reference set of convolutional neural networks (CNNs) on a still image domain that includes a set of labeled training still image frames.

84.   Each of the Accused '336 YI Products, alone or in combination with the YI Home Application, adapts the recognition engine to a video domain to form an adapted recognition engine, by applying a non-reference set of CNNs to a set of domains that include the still image domain, a synthetically degraded image domain, and the video domain, wherein the synthetically degraded image domain includes labeled synthetically degraded versions of the labeled training still image frames included in the still image domain, and wherein the video domain includes random unlabeled training video frames. Further, each of the Accused '336 YI Products, alone or in combination with the YI Home Application, recognizes, using the adapted recognition engine, at least one of the objects in the video sequence to obtain a set of recognized objects and displays the set of recognized objects to a user via a display device.

85.   The following excerpts from YI's websites provide non-limiting examples of the Accused '336 YI Products infringing at least claim 1 of the '336 Patent:

AI Human Detection

Receive notifications on your smartphone as soon as a human figure is detected.

Advanced Human Detection

With built-in highly accurate PIR motion and AI human detection, the Kami Doorbell video camera sends notifications to your smartphone alerting whenever a human figure passes by your door and triggers the smart sensor.
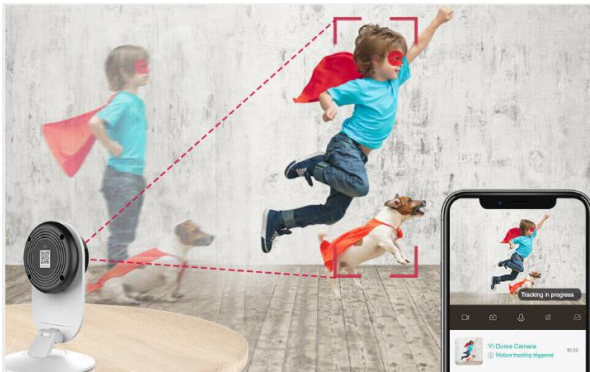
AI Human Detection sensor reduces false alarms caused by plants, animals, or small insects, allowing you to focus on the things that matter most to you.

Unlock Face Detection feature on your Kami Doorbell Camera

Kami Shield cloud service will enable you to easily find videos of your loved ones using the intuitive face search feature, directly on your smartphone. Every Face detected will be stored in Face Album, and you will receive an alert that you can record 24/7 with Cloud Service.

https://www.yitechnology.com/kami-doorbell/.

Advanced Human Detection

With built-in high accuracy human detection technology, the camera sends notifications to your smartphone alerting when human movement was detected.

 AI-powered Human Detection is more robust than traditional PIR or motion detection. Featuring built-in new sensors and highly accurate detection technology, it can reduce false alarms caused by plants, animals, or small insects.

See Every Action, Every Second of it!

Whether you need to check on your kids, pets, or elderly parents, your camera will record every motion detected until it stops. No storage limit, no cool-down period, any time of the day!

- Flexible & affordable plans.
- Connect up to 5 cameras in a single Cloud plan.
- Store alert recordings up to 30 days of video history.
- Automated AI alerts.
- Free to create a time-lapse clip.
- Other features and unlock your peace of mind!

https://www.yitechnology.com/yi-home-2k-pro/.

Advanced Human Detection

With built-in high accuracy human detection technology, the camera sends notifications to your smartphone alerting when human movement was detected.

 AI-powered Human Detection is more robust than traditional PIR or motion detection. Featuring built-in new sensors and highly accurate detection technology, it can reduce false alarms caused by plants, animals, or small insects.

https://kamihome.com/dome-Camera-U.

Edge Intelligence, EI

Our products have original edge computing capability. With algorithm embedded neural network, they complete logic and mathematical encryption locally, greatly protecting privacy, reducing bandwidth and cloud computing load, and performing ultra-high-speed identification and real-time response on terminal devices with the smallest algorithm


Computer Vision, CV

Through image classification algorithm and detection and positioning technology, the arithmetic and self-consistent machine can carry out self-sustaining closed-loop iterative optimization and deep learning to realize multi-dimensional operation, high-precision face recognition, text recognition, image recognition, item recognition, etc.

https://yismart.xiaoyi.com/.

One of the big technology shifts in the Security and Surveillance camera market today is the introduction of AI at the Edge. The "Vision AI" market consists of training and inference.

All indicators point to the training of neural nets mostly happening in the data center, whereas inference will happen at the Edge. Smart Camera systems with AI running at the Edge can significantly reduce the cases of false alarms due to false positives generated by sensor fusion algorithms. According to Simon Forrest, Director of Connectivity and Connected Home at Imagination Technologies, "30% of false alarms are caused by insects". Through the use of Inference Nets at the Edge, the number of false alarms will be reduced quite significantly.

https://news.yitechnology.com/news/smart-home-surveillance-cameras-riding-the-ai-at-edge-wave/.
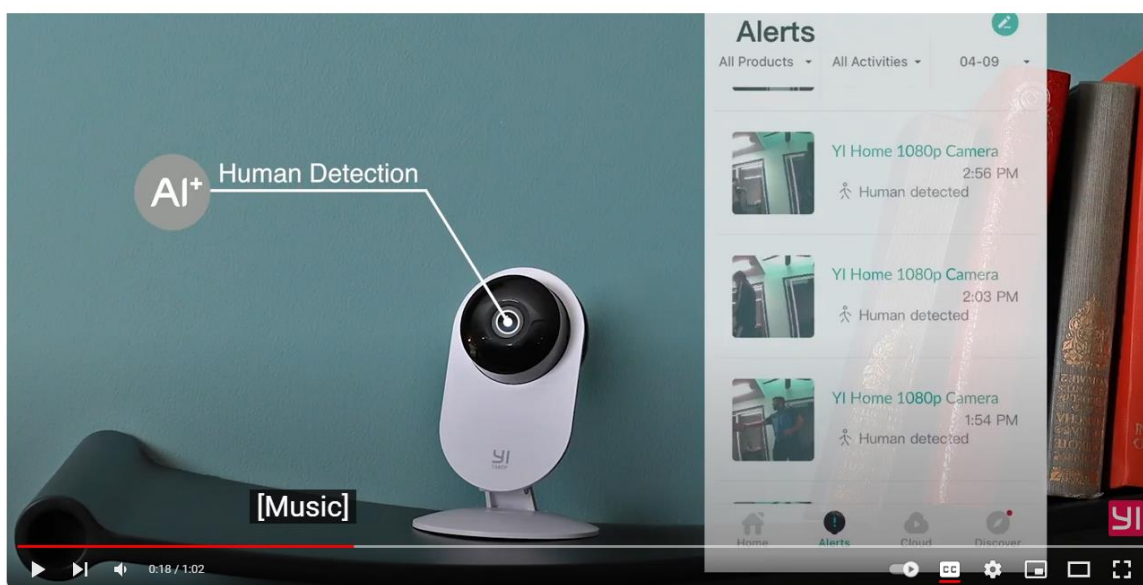
Yi Technology: NEW YI 1080P Home Camera AI+ Powered

YI Technology
15.3K subscribers   Subscribe

👍 55   👎   ↗ Share   ↓ Download   =+ Save   ...

13,218 views Jun 1, 2020
⭐ The upgraded **YI Home camera 1080p featuring human detection** uses advanced and adaptive AI-powered by YI's proprietary integrated SensLab chip to detect humans in motion at up to 20 fps, which means the camera is able to detect a running person and send faster activity alerts.

"Human detection is a Neural Network based AI feature running on the SenseLab QG chip. This upgraded technology with our SensLab chip, we are providing the most innovative smart home security solutions that accurately notify users about activity happening in and around their home, at the most cheaper price," said Gaurang Shah, Chief Operating Officer, YI Technology. "It's truly a top-of-the-line security experience."

https://www.youtube.com/watch?v=B3_Y1EDiB94.

86.   The foregoing features and capabilities of the Accused '336 YI Products, and Defendant's description and/or demonstration thereof, including in user manuals and advertising, reflect Defendant's direct infringement by satisfying every element of at least claim 1 of the '336 Patent, under 35 U.S.C. § 271(a).

87.   Defendant has indirectly infringed at least claim 1 of the '336 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the Accused '336 YI Products. Defendant's customers who purchase devices and components thereof and operate such devices and components in accordance with Defendant's instructions directly infringe one or more claims of the '336 Patent in violation of 35 U.S.C. § 271. Defendant instructs its customers through at least user manuals or websites, such as those located at: https://www.youtube.com/watch?v=vyJdlS_-atE; https://yismart.xiaoyi.com/; https://www.yitechnology.com/yi-home-2k-pro/; https://kamihome.com/dome-Camera-U; https://www2.yitechnology.com/support/faq/id/17/oid/h1; https://www.yitechnology.com/kami-doorbell; https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome; https://www.youtube.com/watch?v=SVupVIQXQ2A

88.   For example, as shown above, Defendant instructs its customers to use "Advanced Human Detection," stating "[t]he upgrade supercharges your Kami Cam with smarter AI that can detect a human and tell you who that human is." *See* https://www.youtube.com/watch?v=SVupVIQXQ2A; *see also* https://www.yitechnology.com/kami-doorbell/ ("With built-in highly accurate PIR motion and AI human detection, the Kami Doorbell video camera sends notifications to your smartphone alerting whenever a human figure passes by your door and triggers the smart sensor.").

89.   Further, Defendant indirectly infringes by inducing and/or contributing to infringement by making available tutorial videos on its official YouTube channels encouraging customers to infringe by enabling Smart Detection and/or Facial Recognition. *See* https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome.

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90.   Defendant is therefore liable for infringement of the '336 Patent pursuant to 35 U.S.C. § 271(b).

91.   Defendant has indirectly infringed at least claim 1 of the '336 Patent by, among other things, contributing to the direct infringement of others, including customers of the Accused '336 YI Products by making, offering to sell, or selling, in the United States, or importing a component of a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '336 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

92.   For example, the Accused '336 YI Products include at least one component to adapt the recognition engine to a video domain to form an adapted recognition engine, by applying a non-reference set of CNNs to a set of domains that include the still image domain, a synthetically degraded image domain, and the video domain, wherein the synthetically degraded image domain includes labeled synthetically degraded versions of the labeled training still image frames included in the still image domain, and wherein the video domain includes random unlabeled training video frames and recognize, using the adapted recognition engine, at least one of the objects in the video sequence to obtain a set of recognized objects. This is a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such component is a material part of the invention and upon information and belief is not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Defendant is liable for infringement of the '336 Patent pursuant to 35 U.S.C. § 271(c).

93.   Defendant has been on notice of the '336 Patent since at least June 3, 2024. By the time of trial, Defendant will thus have known and intended (since receiving such notice), that its

continued actions would actively induce and contribute to actual infringement of at least claim 1 of the '336 Patent.

94.   Defendant undertook and continues its infringing actions despite an objectively high likelihood that such activities infringed the '336 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least June 3, 2024, Defendant has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '336 Patent, and that the '336 Patent is valid. On information and belief, Defendant could not reasonably, subjectively believe that its actions do not constitute infringement of the '336 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Defendant has continued its infringing activities. As such, Defendant willfully infringes the '336 Patent.

95.   NEC has been damaged by Defendant's infringement of the '336 Patent.

COUNT 5 – INFRINGEMENT OF U.S. PATENT NO. 10,970,995

96.   NEC incorporates paragraphs 1-95 above by reference.

97.   The '995 Patent is directed to monitoring events in surveillance systems. For example, the '995 Patent discloses a control method comprising detecting that an event occurred in a surveillance area by using sensor data, identifying a type of the detected event, and controlling a predetermined imaging range of a camera depending on the identified type of the detected event in the surveillance area.

98.   Prior to the '995 Patent, surveillance systems were used for event detection, particularly for capturing events within a surveillance area. '995 Patent at 1:19-23. However, in some situations, surveillance cameras could not adequately cover a detected event that extended

beyond the surveillance area. By only capturing a portion, the full event could not be understood. *Id.* at 1:24-29.

99.   The '995 Patent solved these problems by providing an improved surveillance system that captures abnormal events within a surveillance area and appropriately sizes the surveillance image to capture the abnormal event. *Id.* at 1:30-37. More specifically, the claimed invention includes memory and a processor configured to detect that an event occurred in a surveillance area by using sensor data, identify the type of detected event, and control a predetermined imaging range of a camera depending on the identified type of detected event. Therefore, a surveillance system with improved event detection and imaging range is achieved.

100.   Defendant has directly infringed one or more claims of the '995 Patent in this District and elsewhere in Texas, including at least claim 6 literally and/or under the doctrine of equivalents, by or through its sale, offer for sale, manufacture, use, or import of its surveillance products with object detection with imaging range adjustment functionality, including at least the YI Dome 1080p Camera; YI Dome X Camera; YI Dome Guard 2K; YI Dome U Camera; YI Dome U Pro; YI Outdoor 1080P PTZ Camera; Kami Indoor Camera; KamiCloud; Fall Detect by KamiCare; and any other YI or Kami server (collectively, "the Accused '995 YI Products"). NEC reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the Accused '995 YI Products are identified to describe the Defendant's infringement and in no way limit the discovery and infringement allegations against Defendant concerning other devices that incorporate the same or reasonably similar functionalities.

101.   Each of the Accused '995 YI Products, alone or in combination with the YI Home Application, forms a control system including at least one memory and at least one processor

configured to detect that an event occurred in a surveillance area by using sensor data, identify a type of the detected event, and control a predetermined imaging range of a camera depending on the identified type of the detected event in the surveillance image area.

102.   Within each of the Accused '995 YI Products, alone or in combination with the YI Home Application, the varieties of imaging ranges, including the imaging varieties of types, including the type, correspond to each other and the varieties of the imaging ranges are defined differently depending on the type.

103.   The following excerpts from YI's websites provide non-limiting examples of the Accused '995 YI Products infringing at least claim 6 of the '995 Patent:

https://www.yitechnology.com/yi-home-60#features.

https://www.youtube.com/watch?v=SVupVIQXQ2A.

https://www.yitechnology.com/kami-doorbell.

https://support.covesmart.com/t/83hgqsc/kami-doorbell-camera-settings-and-notifications.

Screenshots from Kami Home App showing "Person Detection," "Vehicle Detection," and "Animal Detection" for Kami Video Doorbell.

104.   The foregoing features and capabilities of the Accused '995 YI Products and Defendant's description and/or demonstration thereof, including in user manuals and advertising, reflect Defendant's direct infringement by satisfying every element of at least claim 6 of the '995 Patent, under 35 U.S.C. § 271(a).

105.   Defendant has indirectly infringed at least claim 6 of the '995 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the Accused '995 YI Products. Defendant's customers who purchase devices and components thereof and operate such devices and components in accordance with Defendant's instructions directly infringe one or more claims of

the '995 Patent in violation of 35 U.S.C. § 271. Defendant instructs its customers through at least

user manuals or websites, such as those located at: https://www.yitechnology.com/yi-home-

60#features;   https://www.youtube.com/watch?v=SVupVIQXQ2A;

https://www.yitechnology.com/kami-doorbell;   https://support.covesmart.com/t/83hgqsc/kami-

doorbell-camera-settings-and-notifications.

106.   For example, as shown above, Defendant instructs its customers to use "Human

Detection," "Automated AI alerts," and "Motion Tracking," stating "Don't just detect motion,

track it! Follow what's going on at home." *See* https://www.yitechnology.com/yi-home-

60/#overview ("Complete coverage with 360° Tracking," "Automated AI alerts"). As another

example, Defendant instructs its customers to use "Advanced Human Detection," stating "AI

Human Detection sensor reduces false alarms caused by plants, animals, or small insects, allowing

you to focus on the things that matter most to you." *See* https://www.yitechnology.com/kami-

doorbell.

107.   Further, Defendant indirectly infringes by inducing and/or contributing to

infringement by making available tutorial videos on its official YouTube channels encouraging

customers to infringe by performing adjustments to the position of the camera in real-time to keep

up   with   the   movement   of   the   target   object   functionality.   *See*

https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome.

108.   Defendant is thereby liable for infringement of the '995 Patent pursuant to 35 U.S.C.

§ 271(b).

109.   Defendant has indirectly infringed at least claim 6 of the '995 Patent by, among

other things, contributing to the direct infringement of others, including customers of the

Accused '995 YI Products by making, offering to sell, or selling, in the United States, or importing

a component of a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '995 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

110.   For example, the Accused '995 YI Products include at least one component to adjust the position of the camera in real-time to keep up with the movement of the target object. This is a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such component is a material part of the invention and upon information and belief is not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Defendant is liable for infringement of the '995 Patent pursuant to 35 U.S.C. § 271(c).

111.   Defendant has been on notice of the '995 Patent since at least June 3, 2024. By the time of trial, Defendant will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 6 of the '995 Patent.

112.   Defendant undertook and continues its infringing actions despite an objectively high likelihood that such activities infringed the '995 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least June 3, 2024, Defendant has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '995 Patent, and that the '995 Patent is valid. On information and belief, Defendant cannot reasonably, subjectively believe that its actions do not constitute infringement of the '995 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement,

Defendant has continued its infringing activities. As such, Defendant willfully infringes the '995 Patent.

113.   NEC has been damaged by Defendant's infringement of the '995 Patent.

COUNT 6 – INFRINGEMENT OF U.S. PATENT NO. 11,537,814

114.   NEC incorporates paragraphs 1-113 above by reference.

115.   The '814 Patent is directed to a data providing system. For example, the '814 Patent discloses a data providing system comprising an identification unit that identifies an object indicated by data by applying the data to a model learned by machine learning, a determination unit that determines whether or not the data is transmission target data to be transmitted to a predetermined computer based on a result obtained by applying the data to the model, and a data transmission unit that transmits the data determined to be the transmission target data to the predetermined computer at a predetermined timing.

116.   The '814 Patent is directed to a system, for easily collecting data that can contribute to the generation of a model with high identification accuracy. For example, prior to the '814 Patent, a camera may capture various appearances of the same object such as cars traveling in one direction (*i.e.*, from right to left) but little opportunity to capture cars traveling in the opposite direction (*i.e.*, from left to right). '814 Patent at 2:2-7. In this example, many images from right to left are obtained, but few of the car traveling in the opposite direction are obtained. Thus, the training data is skewed in one direction, which results in higher accuracy of identification for one direction over the other. *Id.* at 2:7-23.

117.   The '814 Patent solved these problems by providing an improved data providing system with machine learning. *Id.* at 2:31-41. More specifically, the claimed invention includes an identification unit that identifies an object indicated by data by applying the data to a model learned by machine learning, determining whether or not the data is transmission target data to be

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transmitted to a predetermined computer based on a result obtained by applying the data to the model, transmitting the data to the predetermined computer, and displaying a button for inputting a data transmission instruction and an index value indicating identification accuracy of the model. Therefore, a model with increased identification accuracy is achieved.

118.   Defendant has directly infringed one or more claims of the '814 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through its sale, offer for sale, manufacture, use, or import of its surveillance products with AI learning functionality, including at least the YI Pro 2; YI Home 3 Camera; YI Outdoor Camera; YI Dome 1080p Camera; YI Dome X Camera; YI Dome Guard 2K; YI Dome U Camera; YI Dome U Pro; YI Outdoor 1080P PTZ Camera; Kami Indoor Camera; Kami Outdoor Security Camera; Kami Wire-Free Outdoor Camera; Kami mini; Kami Doorbell Camera; Kami Senior Care Camera; KamiCloud; Fall Detect by KamiCare; and any other YI or Kami server (collectively, "the Accused '814 YI Products"). NEC reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the Accused '814 YI Products are identified to describe the Defendant's infringement and in no way limit the discovery and infringement allegations against Defendant concerning other devices that incorporate the same or reasonably similar functionalities.

119.   Each of the Accused '814 YI Products, alone or in combination with the YI Home Application, creates a data providing system. Further, each of the Accused '814 YI Products, alone or in combination with the YI Home Application, includes an identification unit that identifies an object indicated by data by applying the data to a model learned by machine learning; a determination unit that determines whether or not the data is transmission target data to be transmitted to a predetermined computer based on a result obtained by applying the data to the

model; and a data transmission unit that transmits the data determined to be the transmission target

data to the predetermined computer at a predetermined timing.

120.   The following excerpts from YI's websites provide non-limiting examples of the

Accused '814 YI Products infringing at least claim 1 of the '814 Patent:

Edge AI Sensor Detection

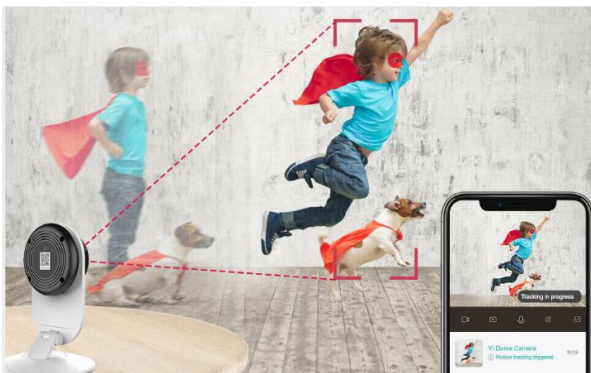Always keeps an eye on things that are important
to you.

https://www.yitechnology.com/yihome.

Human Detection

Receive notifications on your
smartphone as soon as human
movement is detected.

Motion Tracking

Don't just detect motion, track it!
Follow what's going on at home.

Advanced Human Detection

With built-in high accuracy human detection technology, the camera sends notifications to your
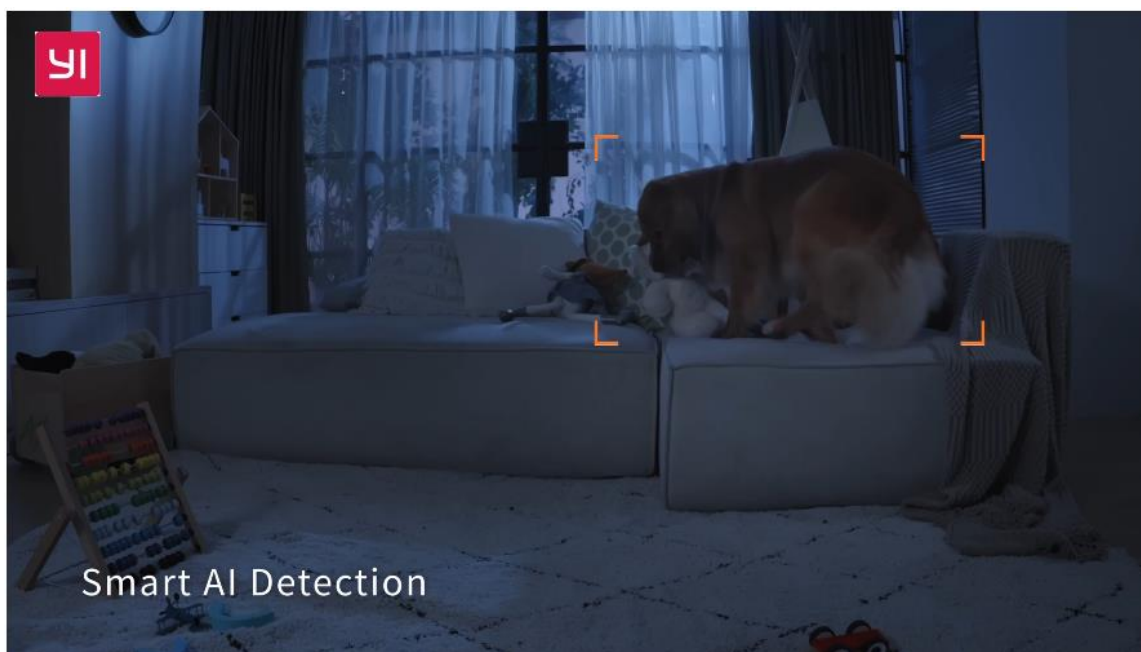smartphone alerting when human movement was detected.

AI-powered Human Detection is more robust than traditional PIR or motion detection.
Featuring built-in new sensors and highly accurate detection technology, it can reduce false
alarms caused by plants, animals, or small insects.

See Every Action, Every Second of it!

Whether you need to check on your kids, pets, or elderly parents, your camera will record every motion detected until it stops. No storage limit, no cool-down period, any time of the day!

- Flexible & affordable plans.
- Connect up to 5 cameras in a single Cloud plan.
- Store alert recordings up to 30 days of video history.
- Automated AI alerts.
- Free to create a time-lapse clip.
- Other features and unlock your peace of mind!

https://www.yitechnology.com/yi-home-2k-pro/.

https://www.yitechnology.com/yi-home-2k-pro#features (embedded video at 0:18).

Advanced Human Detection

With built-in highly accurate PIR motion and AI human detection, the Kami Doorbell video camera sends notifications to your smartphone alerting whenever a human figure passes by your door and triggers the smart sensor.

AI Human Detection sensor reduces false alarms caused by plants, animals, or small insects, allowing you to focus on the things that matter most to you.

Unlock Face Detection feature on your Kami Doorbell Camera

Kami Shield cloud service will enable you to easily find videos of your loved ones using the intuitive face search feature, directly on your smartphone. Every Face detected will be stored in Face Album, and you will receive an alert that you can record 24/7 with Cloud Service.

https://www.yitechnology.com/kami-doorbell/.

Advanced Human Detection

With built-in high accuracy human detection technology, the camera sends notifications to your smartphone alerting when human movement was detected.

AI-powered Human Detection is more robust than traditional PIR or motion detection. Featuring built-in new sensors and highly accurate detection technology, it can reduce false alarms caused by plants, animals, or small insects.

360° Auto Cruise

Advanced motion algorithms detect moving objects and automatically capture and track their movement trajectory. Smart motion tracking keeps up with everything, so you don't have to. The YI Dome Camera U has full 360° PTZ allowing you to see an entire room, from a single location.

Peace of mind is just a tap away.

Whether you're away on vacation or just not home, you can use the YI Home App to keep tabs on your sitter, check in on your pets, or simply monitor your house.

- Instant notifications—anytime, anywhere
- Store up to 30 days of video in the cloud
- Up to 7-day free trial on select Cloud Service plans
- Hold onto your videos longer with our Cloud Service plans
- Designated activity zones in select camera models
- Smarter alerts, not more alerts with advanced AI detection of humans, pets, and abnormal sounds in select camera models

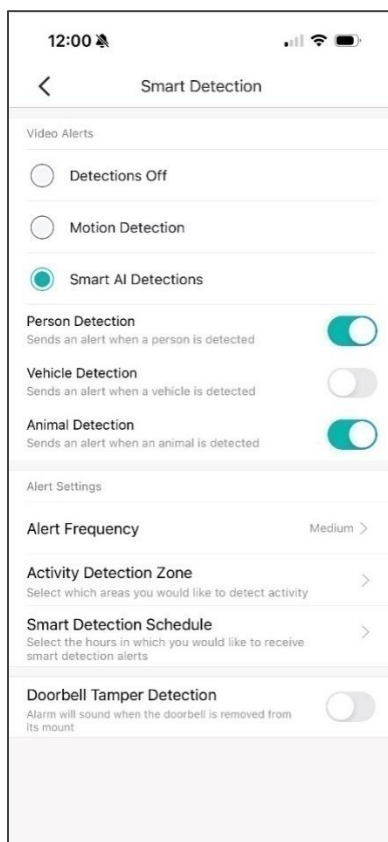https://kamihome.com/dome-Camera-U.

Edge Intelligence, EI

Our products have original edge computing capability. With algorithm embedded neural network, they complete logic and mathematical encryption locally, greatly protecting privacy, reducing bandwidth and cloud computing load, and performing ultra-high-speed identification and real-time response on terminal devices with the smallest algorithm

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Computer Vision, CV

Through image classification algorithm and detection and positioning technology, the arithmetic and self-consistent machine can carry out self-sustaining closed-loop iterative optimization and deep learning to realize multi-dimensional operation, high-precision face recognition, text recognition, image recognition, item recognition, etc.

https://yismart.xiaoyi.com/.

Screenshot from a device using the Kami Home application to enable "Smart AI Detections."
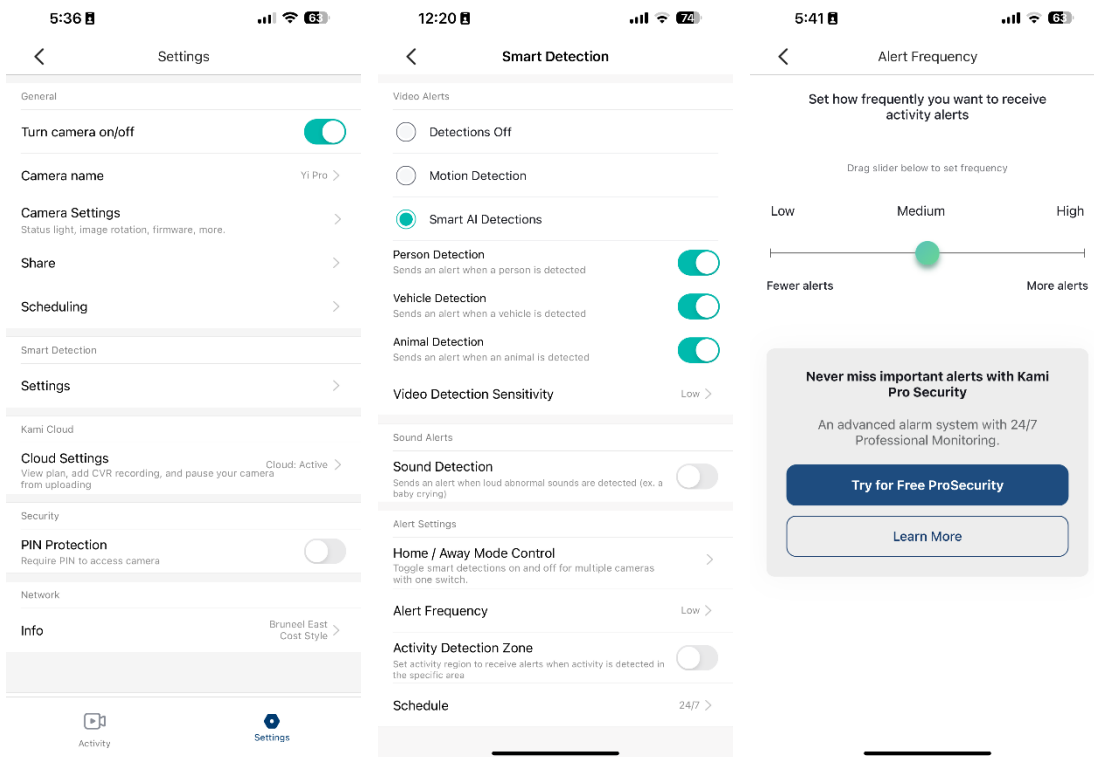
Screenshots from a device using the Kami Home application to adjust "Alert Frequency."
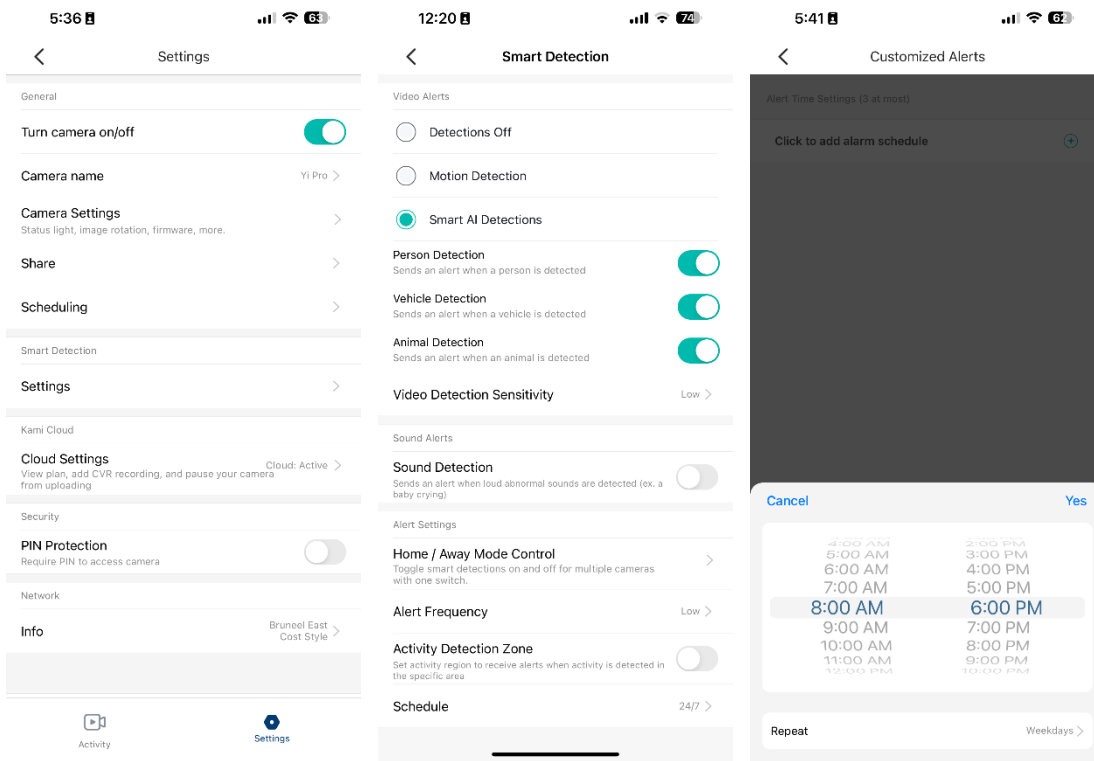

Screenshots from a device using the Kami Home application to showing notification scheduling.

121.   The foregoing features and capabilities of the Accused '814 YI Products and Defendant's description and/or demonstration thereof, including in user manuals and advertising, reflect Defendant's direct infringement by satisfying every element of at least claim 1 of the '814 Patent, under 35 U.S.C. § 271(a).

122.   Defendant has indirectly infringed at least claim 1 of the '814 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the Accused '814 YI Products. Defendant's customers who purchase devices and components thereof and operate such devices and components in accordance with Defendant's instructions directly infringe one or more claims of the '814 Patent in violation of 35 U.S.C. § 271. Defendant instructs its customers through at least user manuals or websites, such as those located at: https://www.yitechnology.com/yihome; https://www2.yitechnology.com/support/faq/id/17/oid/h1;   https://www.yitechnology.com/kami; https://www.yitechnology.com/kami-doorbell;   https://www.youtube.com/@YICamera; https://store.kamihome.com/products/fall-detect-sensor-by-kamicare?variant=45142227681522; https://www.youtube.com/watch?v=mJlWTKeB7ic; https://www.youtube.com/@KamiHome.

123.   For example, as shown above, Defendant instruct its customers to use "Advanced Human Detection," stating "[t]he upgrade supercharges your Kami Cam with smarter AI that can detect   a   human   and   tell   you   who   that   human   is."   *See* https://www.youtube.com/watch?v=SVupVIQXQ2A;   *see*   *also* https://www.yitechnology.com/kami-doorbell/ ("With built-in highly accurate PIR motion and AI human detection, the Kami Doorbell video camera sends notifications to your smartphone alerting whenever a human figure passes by your door and triggers the smart sensor.").

124.   Further, Defendant indirectly infringes by inducing and/or contributing to infringement by making available tutorial videos on its official YouTube channels encouraging customers to infringe by performing identification of an object using AI and send a notification of the same through the YI Home Application functionality. *See* https://www.youtube.com/@YICamera; https://www.youtube.com/@KamiHome.

125.   Defendant is thereby liable for infringement of the '814 Patent pursuant to 35 U.S.C. § 271(b).

126.   Defendant has indirectly infringed at least claim 1 of the '814 Patent by, among other things, contributing to the direct infringement of others, including customers of the Accused '814 YI Products by making, offering to sell, or selling, in the United States, or importing a component of a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '814 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

127.   For example, the Accused '814 YI Products include at least one component to identify an object using AI and send a notification of the same through the YI Home Application. This is a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such component is a material part of the invention and upon information and belief is not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Defendant is liable for infringement of the '814 Patent pursuant to 35 U.S.C. § 271(c).

128.   Defendant has been on notice of the '814 Patent since at least the filing of this Complaint. By the time of trial, Defendant will thus have known and intended (since receiving

such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the '814 Patent.

129.   Defendant undertook and continues its infringing actions despite an objectively high likelihood that such activities infringed the '814 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least the filing of this Complaint, Defendant has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the '814 Patent, and that the '814 Patent is valid. On information and belief, Defendant cannot reasonably, subjectively believe that its actions do not constitute infringement of the '814 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Defendant has continued its infringing activities. As such, Defendant willfully infringes the '814 Patent.

130.   NEC has been damaged by Defendant's infringement of the '814 Patent.

DAMAGES

As a result of Defendant's acts of infringement, NEC has suffered actual and consequential damages. To the fullest extent permitted by law, NEC seeks recovery of damages at least in the form of reasonable royalties.

NOTICE

Defendant has had actual knowledge of the '061, '619, '468, '336, and '995 Patents and its infringement thereof at least as of receipt of the NEC notice letter identified in this Complaint.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, NEC demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, NEC demands judgment for itself and against YI as follows:

A. An adjudication that Defendant has infringed one or more claims of the Asserted Patents, literally and/or under the doctrine of equivalents;

B. An adjudication that Defendant has indirectly infringed one or more claims of the Asserted Patents, literally and/or under the doctrine of equivalents;

C. An award of damages to be paid by Defendant adequate to compensate Plaintiff for Defendant's past infringement of the Asserted Patents, and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

D. An award related to any other equitable relief which may be requested and to which Plaintiff is entitled;

E. A declaration that this case is exceptional under 35 U.S.C. § 285;

F. An award of Plaintiff's reasonable attorneys' fees;

G. A declaration that Defendant's acts of infringement were willful;

H. An award of enhanced damages against Defendant pursuant to 35 U.S.C. § 284; and

I. An award to Plaintiff of such further relief at law or in equity as the Court deems just and proper.

Dated: September 3, 2024   Respectfully submitted,

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