

New Israeli AI system detects wildfires within minutes using sound sensors - interview

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The [Jerusalem Hills](#) took almost a year to recover from the 2025 [wildfires](#), according to an April report by the [Keren Kayemeth Lelsrael-Jewish National Fund \(KKL-JNF\)](#), with new fires expected to break out as summer fully kicks in. And the Israeli AI startup Firewave has been working to create a solution to these fire problems.

"The main bottleneck with [wildfires](#) is in detection, with rescue services not being able to detect the fires before they become a major problem," Dr. Jenia Yurkovsky, co-founder of Firewave, told *The Jerusalem Post*. "And while technology using drones already exists, we are using sound to detect when a fire is about to happen."

The company works by installing thousands of sensors near sensitive areas, such as national parks or critical infrastructure, and uses AI to distinguish the area's normal sounds from those of a fire.

"We have thousands of sounds registered that allow our system to understand not only if a fire is breaking down, but also if it's a controlled fire, a fire that was left unlit, or even a wildfire produced by the hot weather," Dr. Yurkovsky explained.

Dr. Yurkovsky explained that they developed not only the AI system to detect fires but also the devices used for detection, with the system allowing detection of fires a few square meters wide in a matter of minutes.



"This is a game-changer because usually you detect fires when they're already starting to spread, with the first sparks not being observable by traditional detection systems. Between smoke being very thin and fires occurring in forests where visibility is low, these situations were previously impossible to detect on time," he said.

The fight against wildfires is a time battle

According to Dr. Yurkovsky, these time differences are what make the difference when fighting wildfires, with the system allowing rescue services to use a fire extinguisher instead of heavy firefighting machinery.

He also pointed out that these systems work especially well with autonomous firefighting systems, usually involving drones or sprinklers, that can't carry much water but can be useful if fighting small spots.

The company currently operates several pilots with the Kinneret Innovation Center and Israel Nature and Parks Authority, with an array of approximately 140 sensors across multiple high-risk sites in Israel.

Dr. Yurkovsky also explained that they trained the AI to distinguish between controlled fires and [hazards](#), and to ignore sound pollution from Israel's forests and from sites across the world where data were collected.

"One of our pilots was done in California, where one of the most recognizable sounds is that of cicadas. We didn't hear that in Israel, but the system was able to adapt, classify it as part of the environment, and isolate it in order to continue scanning for fires," he recounted.

From fires to forest protection

Firewave is now focused on providing services to businesses, with their main clients being forestry management bodies, national park authorities, critical infrastructure operators, municipalities, HOAs, rural communities, and summer camps bordering dense vegetation.

It also aims to offer its services to private landowners in high-risk zones, as those are usually the most dependent on small fire detection systems.

Additionally, the company explained that it sees potential cash flow in the insurance sector, with high-risk zones like California making it crucial for fires to be detected in the early stages.

"Firewave offers an actionable risk-reduction tool. By providing communities and assets with a verified early-detection layer, the technology opens the door for new insurance underwriting models, premium discounts, and climate resilience certifications," the company said.

But they also explained that, in the near future, they aim to become an "all-included AI forest protection system," that could not only detect fires, but also illegal logging, heavy machinery operation, or unauthorized vehicular intrusion.

"We are already in discussions with a major Chilean forestry enterprise interested in leveraging the platform for anti-logging surveillance," Firewave explained.