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Artificial Intelligence vs. Poachers: How AI Can Help Protect Endangered Animals

By [Katherine Derla](#), Tech Times | April 24, 5:43 AM

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Poachers have a new enemy: artificial intelligence. Scientists have developed an AI system that can continuously learn and adapt to illegal activities and help rangers move swiftly to protect endangered animals in the wild. (Photo : Hans Braxmeier | Pixabay)

Researchers are using artificial intelligence (AI) to solve increasing [poaching activities](#), applying computer science and game theory to lead the innovation to outwit poachers in the wild.

A team of scientists have successfully created an AI system that "learns" information and uses data to map out ranger patrols that are most effective in protecting endangered animals living in the wild.

These ranger patrols are still the most direct wildlife protection methods against poachers. Unfortunately, despite the efforts, many agencies do not have advanced equipment and even funds to stop the illegal activities.

"In most parks, ranger patrols are poorly planned, reactive rather than pro-active and habitual," [said](#) Fei Fang, a doctoral candidate at the University of Southern California's (USC) computer science department.



Now, a team of researchers is upping the ante with advanced science. They have created an application they dubbed the Protection Assistant for Wildlife Security or PAWS.

PAWS uses computer and mathematical models to predict the poachers' behaviors. This game theory-based application can then help park rangers to efficiently conduct their patrols.

USC computer science professor Milind Tambe led the PAWS development, which was funded by the National Science Foundation (NSF). The AI system was built on the idea of applying game theory to the protection of wildlife that they called "green security games."

Tambe added that the PAWS development is a way of showing how AI can have a huge impact on society. Similarly, the Transportation Security Administration and the Coast Guard utilized similar approaches to protect waterways and airports.

Some of these systems were created by Tambe, who is also the Teamcore Research Group on Agents and Multiagent Systems director.

PAWS was first created in 2013. In 2014, its pilot system was put to the test in Malaysia and Uganda. While the system revealed some limitations, there were many improvements that resulted from the first learnings.

PAWS's key advancement is the incorporation of complex terrain data. This covers the protected area's topography, which then led to the creation of practical routes to limit the differences in elevations that could slow down patrol action. This then saves not just time but also energy.

"We need to provide actual patrol routes that can be practically followed. These routes need to go back to a base camp and the patrols can't be too long," added Fang.



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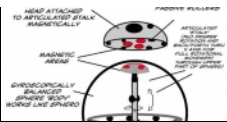
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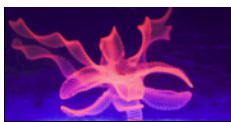
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