Police-bot

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State: Maryland
Define the Problem

An increase in crime in many neighborhoods leads to the death of many young people as a result of drugs and fights. To solve this problem, police officers are needed in streets in Maryland. Also, police officers are also at risk of being hurt or killed by ambush of bad guys in the streets. Hence, police-bot will be placed in neighborhoods for security surveillance to aid neighborhood policing and reduce crime casualties that include civilians and police officers.
Why is it important?

The purpose of Police-bot is to help provide security in neighborhoods by its ability to detect and report any presence of drugs or weapons in the neighborhoods. Of course, the bot would have to know which drugs are illegal in each state considering how laws are different in every state. Police-bot will help make a neighborhood safer. The bot will allow the neighborhood to be peaceful for the residents to live in.
Police-Bot is a neighborhood security robot that will patrol the neighborhood regardless of whether the neighborhood is wealthy or poor. It is solar powered during the day, however during the night it is battery operated, so that it can work constantly. It has sensors, highly sensitive to detect drugs and weapons on the streets. Anytime Police-Bot detects something suspicious it will send a signal to the closest police station. The station will analyze the sent signal and decide whether policemen should be deployed to the location that police-bot gives the signal from or ask police-bot for more details. Police-Bot will not suspect someone based on race, gender or ethnicity, but it will suspect someone on their possessions. It is clear that many people have armed weapons for protection, however when the bot suspects an armed weapon, the police can check if the person has a license for the weapon or not.
Background Research

- Police have been using robots since 1970.
- Some robots can diffuse bombs and give tickets.
- A robot is any automatically operated machine that replaces human effort.
- People use robots for hard or boring work.
- Helper robots must be tough they are made out of strong metals and plastic.

- Police officers patrol regular routes watching for suspicious activity.
- Police officers usually develop personal relationships with local residents.
- Police communicate with residents so they can feel more comfortable telling officers when they notice suspicious activity.
Robot Requirements

Brainstorm

- Wheels for mobility
- Usable Grippers in case the robot needs to grab something/someone.
- Built-in recording system
- A circuit or built-in computer filled with code and instructions.
- Automatic shutdown button that can be activated with a code.
- Metal and bulletproof body
- Computer programed camera eyes
  They will help the people behind the robot see what is happening.
Prototype Design

- Make control
- You must know the law
- Have a tight grip
- So that he can go almost anywhere
- Start button
  - Force
The grippers allow the robot to pick objects like drugs up. The grippers also allow the robot to grip humans the robot knows committed a crime.

The control panel is password protected. It can only be accessed by members in the police department.

The body is made out of a bulletproof metal. This allows the robot to be less prone to destruction.

The badge has a built-in recording system. It is disguised as a badge so people can’t see it and destroy it.

The eyes are cameras. Behind the eyes, the police officers can watch what is happening in the area.

The automatic shut down button allows the robot to be shut down and it is also password protected.

The wheels help with mobility. The wheels will be able to move in any substance like snow, thick mud, etc.
# Financial requirements

<table>
<thead>
<tr>
<th>Material</th>
<th>Cost $</th>
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</thead>
<tbody>
<tr>
<td>Built-in recording system</td>
<td>$1000 - 4000</td>
</tr>
<tr>
<td>Usable Grippers</td>
<td>$100,000</td>
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<tr>
<td>Wheels</td>
<td>$10,000 - 15,000</td>
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<tr>
<td>A circuit or built-in computer</td>
<td>$500-700</td>
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<tr>
<td>Automatic shutdown button</td>
<td>$15-100</td>
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<tr>
<td>Metal and bulletproof body</td>
<td>$16,000</td>
</tr>
<tr>
<td>Computer programed camera (eye)s</td>
<td>$80-90</td>
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Prototype Test (Strengths, Weaknesses, & Future Development)

Behind the eyes, the police officers can watch. The robot’s strengths are its ability to go almost anywhere and its automatically storing of evidence because it’s always recording. Also, it can view its culprits or suspects and the police could see if a suspect matches the description of a wanted person. The robot’s weaknesses include its use of wheels which will make it not able to go very fast if a suspect is running away. Also, if it goes on its regular route and something/someone block its way, it could crash into the thing/animal/person. Another problem is that it may be considered invading the privacy of people but for people’s protection and security.

To test the prototype, police could put it in a small neighborhood. The police could pretend to be criminals and view what the robot does. In the future, the robot would need to have programming and be less expensive so it can be cost effective and easily obtainable.
Bibliography

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