

# Cleaning, Mapping, and Disinfecting Robot Design Proposal

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# Outline

## 1 Introduction

## 2 Current Design

## 3 Development Plan

- CAD Modeling
- Electrical and Software Design

# Introduction

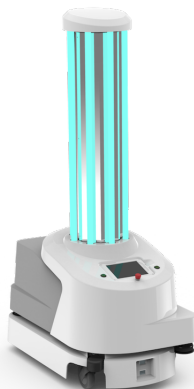


Figure: UVD Robot, source: <http://www.uvd-robots.com/>

# Introduction



Figure: Xenex LightStrike Germ-Zapping Robot, source:  
<https://www.xenex.com/our-solution/lightstrike/>

# Proposed Robot Design

## Key Features

- Proposed robot will offer a modular design and open source architecture
- Design will follow plug-and-play architecture – Disassembly will be one of the key features allowing parts to be added or changed
- Software and hardware will follow open-source platform architecture
- Proposed robot design will be cost-effective in terms of executing navigation algorithms

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- Robot will include a disinfectant sprayer in case a room is unsafe to be cleansed with UV light
  - Vacuuming feature will be added to further set the robot apart from its commercial counter parts

# Current Design

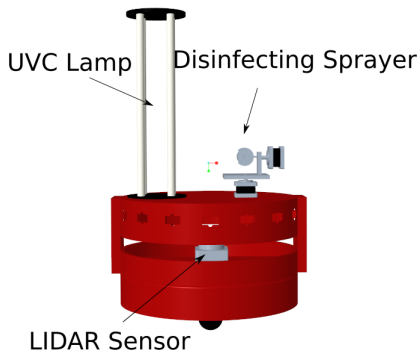
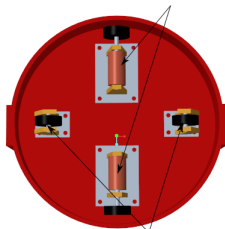


Figure: Side view of the current robot design

Differential Drive Wheels



Caster Wheels

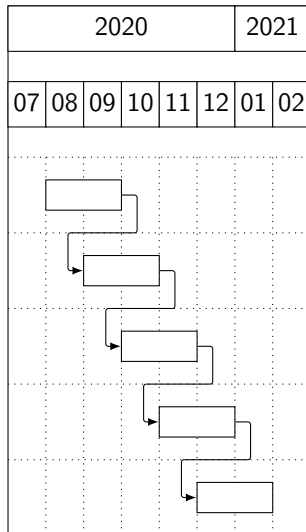
Figure: Bottom view of the current robot design



# Development Plan

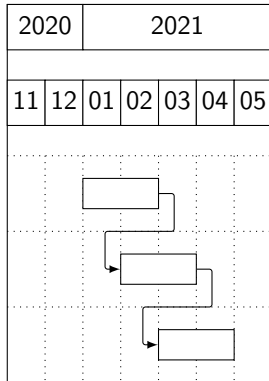
## CAD Modeling

- Redesign outer shell of the robot
- Design vacuuming system
- Create mount points for sensors
- Design disinfectant sprayer mechanism
- Design caster and drive wheel mounts



## Electrical and Software Design

## Develop software and firmware



# Any Questions?