

# Laser Sentry Repellent – Phase II

**Status:** Available

**Group Members:**

**Sponsor(s):** Kopahi Manufacturing

**Supervisor(s):** Krishna Vijayaraghavan, PhD, P.Eng, Associate Professor, Mechatronic Systems Engineering  
Moe Kopahi, Kopahi Manufacturing

## Project Description

In 2023, KM3D sponsored a capstone team to craft the inaugural version of our Rodent Sentry System. This endeavor culminated in the creation of a prototype capable of utilizing computer vision and AI to identify and target distinct objects with a low power laser. The current prototype is able to identify different targets and aim a low power laser at it and follow it with some delay. At this new phase of the project, we are going to improve some of the functionality as well as add features to

dark environments by focusing on integrating (IR) sensor.

limited image scanning, Incorporating predictive trajectory and design optimization.

limited image scanning, Incorporating predictive and trajectory and other means.

parameters.

with a focus on basic app functionality; 3<sup>rd</sup> party developer is okay)

- a) Creating a user-friendly app connecting to the device, enabling mode selection (Surveillance or Defensive). Surveillance mode enables the device to act as a security camera, gather valuable data on targets, and offer user-friendly target selection. The Defensive mode enables the laser to engage with the target for means of deterrence.
- b) The Device should record its actions while in use and the user can access the footage through the app. The footage can be used for defining/ editing targets.
- c) The app should notify the user of any actions that need to be taken, for example a dying battery or lack of vision, or a successful case of repelling or not being able to repel.

## **Deliverables:**

The capstone team is expected to provide the following By August 2024:

2 identical prototypes that deliver all points mentioned in the scope of the project.

**Why Select This Project:**

- A. Work with a team of SFU MSE and UBC alumni on product development and commercialization.
- B. Potential career building opportunity after graduation depending on the success of the project and seed round fundraising, and a few other factors.
- C. KM3D provides 3d printers and up to \$1,500 of funding for this project. More funding is available upon request.
- D. KM3D will provide last year prototypes, their design and software files for this year's capstone team to continue the work.