the heart rate enters the region where the LF is less than 60% and the HF is more than 40%, it means the driver is getting drowsy and after a few seconds into that region, the device will also sound an alarm to alert them. We tested the device in a car while driving and it yielded satisfactory results and response times. After two semesters' work and the accelerator's experience, we feel confident enough to move forward with our project and reach new heights. From a technical side, we intend to use a NVIDIA Jetson X2 module and GPU programming which is more advanced than the Raspberry Pi we have been using. We also plan on using a much more advanced heart rate sensor to allow for a more accurate and reliable performance once we have a budget that allows us to. Furthermore, a couple of incubators approached us at IDEAS 2019, which was organized by MSFEA, to adopt out project and help us financially to launch it. Finally, a special gratitude and acknowledgement to the MSFEA faculty and ECE department for supporting entrepreneurship initiatives taken by students and equipping them with the necessary tools to develop abstract projects into a reality.

We express our sincerest gratitudes to Dr. Lama Hamandi who truly stood by us through the hard times encountered in this project ■

Tree-D

Yahya Khaled El Ali

Lebanon, a country distinguished by its unique ecological formation and its charming natural wealth, and fauna and flora, has been facing exponentially growing environmental problems because of global warming – a catastrophic phenomenon which has accelerated harmful parasites' penetration of trees. Each year, harmful parasites infect thousands of trees, which explains the declining trend of the Lebanese Agricultural sector, which makes up an important part of the national GDP. The frequency of this occurrence rings the bell of social concern, as families lose a potential source of income.

Today, farmers in Chouweifat – a Lebanese city – believe that the more trees are planted, the more tangible poverty is. This claim is valid. The decrease in annual yields and harvest rates accompanied with increases in the costs of pesticide treatments implies a financial challenge and a setback.

Parasites are known to relocate from one tree to another which proves the necessity of treating all infected trees

However, many farmers, private owners, etc. cannot afford deploying the existing pesticide treatments on all the trees they own or can save which explains the ineffectiveness of the existing solutions.

By now, you are probably asking yourselves: "How big of an issue is this in monetary terms?" Entomologists estimate that, each year, Lebanon loses a value worth of $1 Million because of 150 dead pine trees. With pine trees constituting 18% of the total trees in Lebanon, it is truly a devastating loss. Therefore, is developing a radical, autonomous and cost-effective product feasible? The answer is Tree-D. Tree-D is a service startup that utilizes drones, chemical pellets, and a shooting mechanism to deliver autonomous, highly accurate, and cost-effective seasonal treatments for trees. Tree-D is made accessible to every single person for an affordable price starting from LBP 5,000 per tree.What are you waiting for? Make every cent count to save the Lebanese environment ■

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