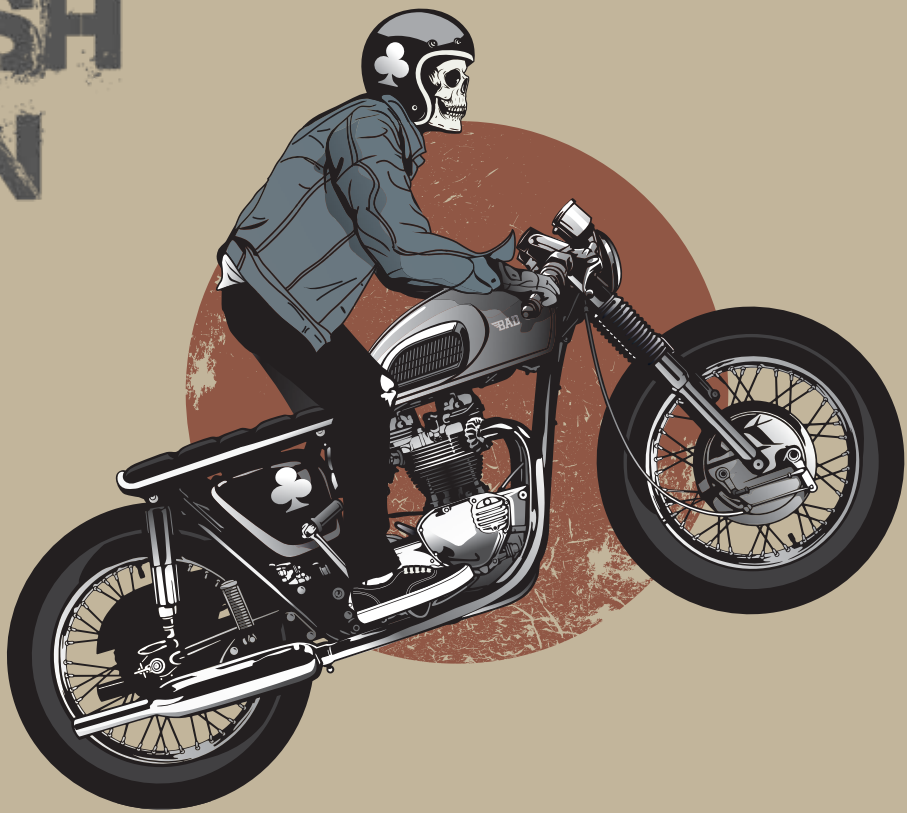
BIKE CRASH DETECTION SYSTEM



An Interview with
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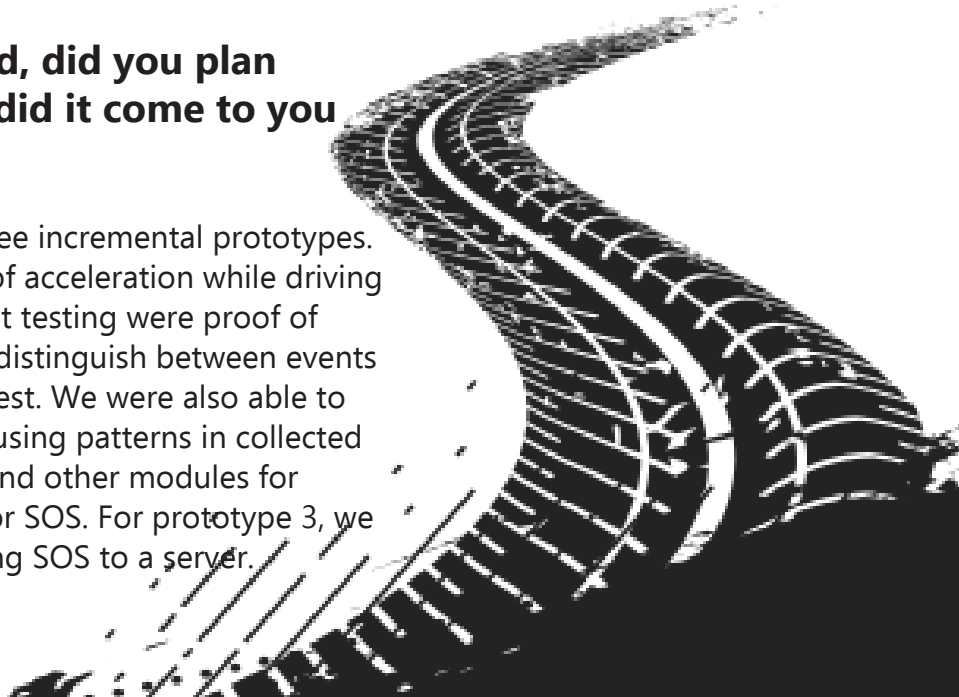
How did you start your project and what was the first step?

Goa is a place of hilly regions, rainy season and secluded roads, where finding help may be difficult in case of an accident. Keeping this in mind, we started to think "can we build a device which can detect a road accident?". After some brainstorming we realised, a car fitted with airbags detects a crash using sensors. We wanted to build this technology for bikes in the form of cheaper and smaller sensor which not only will be able to detect a crash but also will send an SOS signal to the nearest hospital.

For starters, we relied on the physics formulas to find out the approximate force and acceleration involved in a bike crash. We thought of different scenarios where different forces will be applied on a bike. After using formulas for calculating acceleration and braking forces, we decided to test our 1st prototype on real road conditions with potholes, speed breakers.

How did you proceed forward, did you plan everything from the start or did it come to you as you did it?

We planned the implementation in three incremental prototypes. For prototype 1, we got actual values of acceleration while driving a bike on Goan roads. The results of 1st testing were proof of concept for the idea. We were able to distinguish between events like rash driving, slow driving, bike at rest. We were also able to differentiate between types of drivers using patterns in collected data. For prototype 2, we added GPS and other modules for collecting more useful data required for SOS. For prototype 3, we planned to add functionality for sending SOS to a server.



What was the toughest part? Also, what is the toughest part of such projects in general, the marketing, the implementation or simply getting started?

In our project the implementation was the toughest part. The main challenge was to make the product compatible with existing bikes. Also, another challenge was to keep the cost of the product and its installation at minimum.
Even in general, the implementation of a product is the toughest part if the product is to be added in an existing system. It is also tough to keep patience and strong willpower till initial success is achieved.

Do you plan to use your product or provide it to the general public, in the future?

Due to COVID-19 and lockdown our project got derailed as we couldn't continue with prototype testing. Currently, we all are in different locations so the project is on halt.

How should we decide which project is ideal? Should we choose something we are good at or something we want to do? Should we focus on making a difference in our world or following our passion?

Basic evaluation can be, imagine yourself in the shoes of a consumer and think whether you will buy your own product. Prefer innovative projects over mundane projects. You should select a project which you want to do but it should mostly overlap with your skillset.

Any advice for young people or beginners? Especially undergraduates who have an idea, but don't know how to implement it.

The most important thing in executing an idea into a reality is to have a good team. In the team all members should be active and should bring different skillset to the table.

Implement projects in a step-by-step manner. Large implementations are hard to manage and debug for budding teams and this discourages teams into leaving the project. Have a strong determination and perseverance till initial success.