

**Algorithm Design for Innovative Problem**

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**M.VOLUNTEER**

*Turning ‘Spectators’ into ‘Volunteers’*

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*A report for aimed finding the solution for reducing the likelihood of Road accidents while avoiding delay in assistance for the victims*

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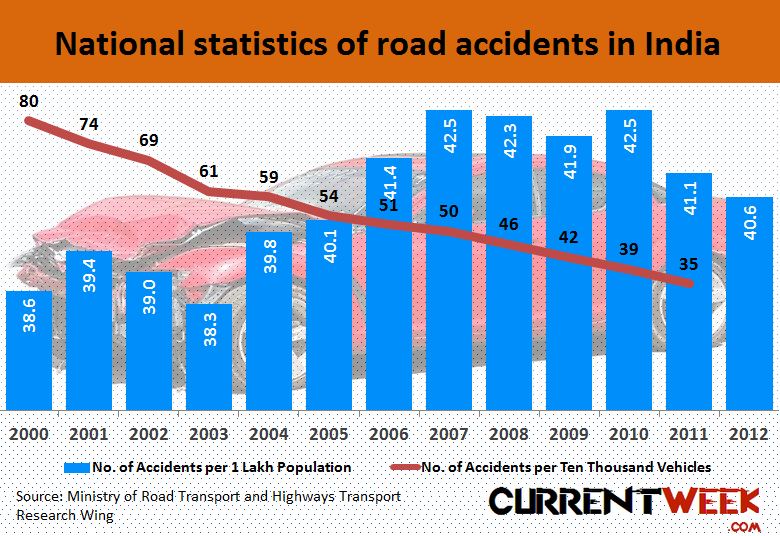
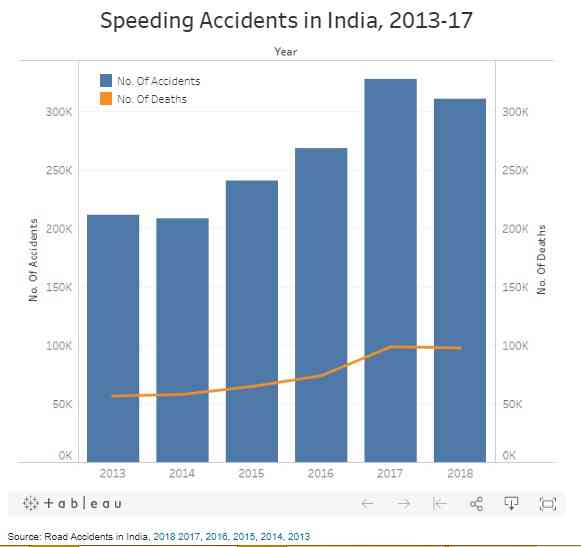
**Design Analysis and Algorithm (G11+G12+G13)**

Submission Date

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PROBLEM STATEMENT

***Road accidents are one of the 12 most common causes of deaths in India, the ninth most common cause of premature deaths, and the 10th most common reason for disability,*** according to the 2017 WHO Global Health Estimates. In 2018 alone, India witnessed a staggering 4.61 lakh deaths related to traffic incidents pointing to a rise of over 3 points in the past two decades. According to the statistics from [Road Accidents in India](https://morth.nic.in/sites/default/files/Road%20Accidednts%20in%20India%20-%20201811.pdf) 2018, a report published by the Ministry of Road Transport and Highways, India’s young, productive population (aged 18-45 years) is involved in 70% of road accidents. These accidents costs India a [3-5% of gross domestic product](https://openknowledge.worldbank.org/bitstream/handle/10986/29129/HighTollofTrafficInjuries.pdf?sequence=5&isAllowed=y) every year.

In the year 2018, A world Bank Report suggested that over a period of 24 years (from 2014 to 2038), if India could halve the deaths and injuries due to road traffic, its GDP could increase by 7%. According to data from a 2018 World Health Organization [report](https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries), India while accounting for only 1% of the world’s vehicles accounts for 6% of the world’s road traffic accidents. The report also stated that as many as 73% of all deaths due to road traffic accidents in 2018 in the South and South-East Asia region happened in India. Though the government has formulated several strict laws but the enforcement is still puny. The fine for speeding has been increased from Rs 500 to Rs 5,000 since September, 2019 under the new [Motor Vehicles Act](http://egazette.nic.in/WriteReadData/2019/210413.pdf) of 2019. In addition, the law demands the imprisonment of drivers for a period of three months for speed racing – an illegal race– if it is their first offence, and for a period of one year if it is the second offence. We know human behaviour is conspicuously affected by enforcement but in India, enforcement loses its power to widespread corruption.

Over 30 percent of all road accidents in India are hit-and-run cases, but only 10 percent of hit-and-run accident drivers are reported. A lack of concern for the other person’s safety, coupled with rash driving and scarcity of time are major contributing factors.

CRUX OF THE ISSUE

While the rising intolerance and the lack of empathy amongst the current generation is often blamed for road accidents. ***The hidden crux behind the issue is scarcity of Time***. In the current times time is of the essence. It has turned into an entity that everyone desires for but what everyone is devoid of. This scarcity of time has driven humans to a point where they are obsessed to speed and this desire to reach quicker than anyone else causes the most number of accidents. Even after witnessing a gruesome accidents, people just pass by blaming their prior commitments and the scarcity of time caused by their tight schedule. It’s ironical how people are losing precious years of their life just to save seconds off of it.

Target Audience

The problem affects a major section of the society providing us with a huge and a widely distinct target audience. In General, our target audience will be the middle class section of the society which resides in the developed modern cities and depend on personal transport for commuting.

Summary and Our Proposition

With the value of time rising every second and the intolerance in people sky rocketing the frequency of road accidents is bound to increase while the frequency of people stopping to help the victims is bound to drop. This unethical and diabolical approach has affected lakhs of families in India but not anymore.

With our solution we aim at building a collaborative platform built upon ideologies like Brotherhood and unanimity which are induced in our widely recognized culture while giving people a chance to partake in social services in their routine life to feel good about themselves. We aim to build a community of vigilant and emphatic citizens.

SURVEY

Some Existing Solutions

1. **Waze**

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| **Description** | **(acquired by google)** While it’s possible to use Waze to plan routes and get from A to B, the unique feature of this application is its real-time traffic tips. All users of the app can input information that lets other road users know about traffic levels and accidents as they happen. Many auto accident insurance companies recommend this app to their clients because it helps them to avoid troublesome areas and keep away from the commotion. With [Waze](https://www.waze.com/), you and other drivers in your area can share real-time traffic and road information. Get alerted before approaching police, accidents, road hazards or traffic jams. |
| **Fund Raised** | In 2010, the company raised $25 million in the second round of funding. The company raised an additional $30 million in financing, the following year. [Waze](https://www.crunchbase.com/organization/waze) has raised a total of [$67M](https://www.crunchbase.com/search/funding_rounds/field/organizations/funding_total/waze) in funding over [3](https://www.crunchbase.com/search/funding_rounds/field/organizations/num_funding_rounds/waze) rounds. Their latest funding was raised on [Oct 18, 2011](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_at/waze) from a [Series C](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_type/waze) round. [Waze](https://www.crunchbase.com/organization/waze) is funded by [7](https://www.crunchbase.com/search/principal.investors/field/organizations/num_investors/waze) investors. [Kleiner Perkins](https://www.crunchbase.com/organization/kleiner-perkins-caufield-byers) and [Horizons Ventures](https://www.crunchbase.com/organization/horizons-ventures) are the most recent investors. The company also began to monetize its app in November 2012, offering resellers and advertisers a web interface to advertise based on location, where a small icon appears when a phone is at a particular location, prompting the user to engage. |
| **Advantages** | The app was updated in 2011 to display real-time, community-curated points of interest, including local events such as street fairs and protests. |
| **Disadvantages**  **And**  **Concerns** | Concerns have been expressed that the app located on smartphones can be used to monitor movements by identifiable individuals.Some road-safety advocates have voiced concern over the prospect of more drivers using Waze, which they say has the potential to distract them with a flurry of icons and notifications and put them at greater risk of an accident. In March 2014, a successful attempt was made by students from [Technion-Israel Institute of Technology](https://en.wikipedia.org/wiki/Technion_%E2%80%93_Israel_Institute_of_Technology) to fake a traffic jam. In December 2014, in a letter sent to Google, [Los Angeles Police Department](https://en.wikipedia.org/wiki/Los_Angeles_Police_Department) Chief [Charlie Beck](https://en.wikipedia.org/wiki/Charlie_Beck) complained about the police locator feature, claiming it could be "misused by those with criminal intent to endanger police officers and the community". It was alleged that Ismaaiyl Brinsley, who [shot and killed two NYPD officers](https://en.wikipedia.org/wiki/2014_killings_of_NYPD_officers) that month, had used the Waze app prior to the murders and had posted a screenshot from the app on his Instagram account hours before the shootings, but that was unsubstantiated as the post was made 3 weeks prior to the shootings. Users are able to mark the presence of an officer with a small icon and indicate if the officer is visible or hidden. In April 2018, Waze was criticized for rerouting traffic to Baxter Street in [Echo Park, Los Angeles](https://en.wikipedia.org/wiki/Echo_Park,_Los_Angeles), which is one of the steepest hills in the United States. The app was blamed for exacerbating the road's present condition and increasing the number of crashes and spin-outs at the steep hill. |
| **Target Audience** | The target audience seems to be users with mobile devices who drive. The app is also targeted towards younger people, as it has the social aspect to it.  The ideal mobile consumer profile for the app would be a combination of Up-to-date users and Busy & Productive users. |
| **Technologies**: | uses 21 technology products and services including Google Analytics, Google Tag Manager, and G Suite (formerly Google Apps for Work). |
| **Downloads:** | [Waze](https://www.crunchbase.com/organization/waze) has 6,612,094 monthly app downloads. The most popular apps downloaded are [Waze Navigation & Live Traffic](https://www.crunchbase.com/apptopia_app/78de1e64-0abc-45cc-9cfc-2bc29af576a6), [Waze Carpool](https://www.crunchbase.com/apptopia_app/c00b99f0-701f-4aac-b12c-d963ba1a34a9), and [W on Air](https://www.crunchbase.com/apptopia_app/67772452-5e58-4b18-a763-cf07a2cdb864). [Waze](https://www.crunchbase.com/organization/waze) has $37.7M in estimated revenue annually. [Waze](https://www.crunchbase.com/organization/waze) competes with [INRIX](https://www.crunchbase.com/organization/inrix), [MapQuest](https://www.crunchbase.com/organization/mapquest), and [Ridlr](https://www.crunchbase.com/organization/birds-eye-systems). |
| **Recognitions** | Israeli GPS App Waze Wins Best Mobile App Award At Mobile World Congress. |
| **Sources** | <https://jenteitell.wordpress.com/2014/04/11/waze-mobile-marketing-case-study/>  <https://www.waze.com/>  <https://www.crunchbase.com/organization/waze>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/>  Waze socials- Twitter etc |
| **Ideas/ How it Benefits us** | Route planning to ensure safety of user, quick arrival at destination by avoiding congested areas. Social aspect gives another dimension to the idea. |

1. [**SafeDrive**](https://www.getsafedrive.com/)

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| **Description** | An app that works by awarding the user points for driving safely. The app engages once you exceed 6 mph or 10 km/h and uses an algorithm to award you the points. Once you fall below the 6 mph or 10 km/h threshold, the point you’ve earned for that drive will appear and will be added to your existing points. The points can be used to on discounted products offered by companies in partnership with DriveSafe. You can challenge friends around the world and even wager some of your points. |
| **Fund Raised** | [SafeDrive](https://www.crunchbase.com/organization/safedrive) has raised [1](https://www.crunchbase.com/search/funding_rounds/field/organizations/num_funding_rounds/safedrive) round. This was a [Non-equity Assistance](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_type/safedrive) round raised on [Mar 23, 2015](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_at/safedrive). [SafeDrive](https://www.crunchbase.com/organization/safedrive) is funded by [MVP Academy](https://www.crunchbase.com/organization/how-to-web-mvp-academy). Aug 8, 2016 wins £150k in global competition searching for small businesses changing the world**.** |
| **Advantages** | A points-based reward system allows users to redeem points with SafeDrive's partners (such as Uber, Kiip.com and local gas stations). Kudos to these guys for trying to solve a dramatic problem: distracted driving is a dangerous epidemic on America's roadways. |
| **Disadvantages**  **And**  **Concerns** | Doesn’t count points for distance less than 3km and sometimes even more due to algorithm(counts speed and time as well). Picks up bicycle rides as distracted . Sometimes trips not recorded or inaccurately recorded, often run out with full battery. |
| **Target Audience** | Year 11 students, as this group has a high risk of being involved in a road traffic collision. Many will already be travelling as passengers in cars driven by new drivers, or will be learning to drive in the next 12 months.National statistics show that young drivers are involved in a significantly higher number of accidents than the rest of the population. |
| **Technologies** | [SafeDrive](https://www.crunchbase.com/organization/safedrive) uses 3 technology products and services including Google Analytics, WordPress, and Vimeo. S[afeDrive](https://www.crunchbase.com/organization/safedrive) is actively using 3 technologies for its website. These include SPF, Mandrill, and Ninja Forms. Built With [android](https://devpost.com/software/built-with/android), [ios](https://devpost.com/software/built-with/ios), and [web](https://devpost.com/software/built-with/web) |
| **Downloads:** | 12000+ monthly downloads |
| **Recognitions** | 1 Innovation Gold Medal from Edison Awards 2015, New York, US1 Most Votes app 16th June, 2015, Product Hunt1 Winner Connected Intersection Challenge 2014, by AT&T, New Work, USDrive , [MVP Academy alumni: 10 tech startups to watch](http://blog.howtoweb.co/2016/03/mvp-academy-alumni-10-tech-startups-to-watch/) |
| **Sources** | <https://www.dwfire.org.uk/education/road-safety-education/safe-drive-stay-alive/>  <https://www.crunchbase.com/organization/safedrive>  <https://play.google.com/store/apps/details?id=com.safedrive.safedrive&hl=en_IN>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/> |
| **Ideas/ How it Benefits us** | The rewarding system can be implemented to motivate the drivers and even as a healthy competition( like running assistant apps). Can be potentially traded for rewards in the future |

1. [**SOSmart**](http://www.sosmartapp.com/)

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| **Description** | detects car accidents using the internal sensors of your Smartphone, and immediately sends an emergency notification with your location to your pre-determined emergency contacts with your location and nearby hospitals so that they can contact first responders for you. The app also has a panic button that will alert your contacts, no crash required, to your location if you find yourself in need of help in any other capacity. According to European Commission Ecall system “reduces rescue services’ reaction time to 50% in rural and 60% in built-up areas” but they have been implementing it on Europe for about a decade and it´ll probably take another decade until it´s fully implemented. That is why a group of engineers based in Santiago, Chile created “SOSmart” using real car crash data obtained from the NHTSA |
| **Fund Raised** | Friends and Family round(Undisclosed) |
| **Advantages** | This app is capable of automatically detecting the impact of a severe motor vehicle accident, using only the internal sensors of a smartphone and complex detection algorithms. Only seconds after the crash, the app sends a notification with the location of the victim to the emergency contacts that they had previously selected, such as their parent or partner. This allows their family members to contact emergency services immediately, possibly saving lives and granting their families peace. During the discussion they speculate that sudden braking can generate false alarms. Within the team we have made sudden brakes at about 130 km / hr and SOSmart does not release a false alarm, the system is very well designed. |
| **Disadvantages**  **And**  **Concerns** | Drains battery when closed, sometimes.Parts are in Spanish.Bugs. can’t add contacts. Needs UI Designing/ No explanation. Can’t pick hospital sometimes. 2.7 rating |
| **Target Audience** | The target audience seems to be users with mobile devices who drive. Specifically the working class, who receive calls and mails frequently and work under heavy pressure and time constraints. |
| **Technologies** | [SOSmart](https://www.crunchbase.com/organization/sosmart-automatic-car-crash-notification) is actively using 21 technologies for its website. These include Viewport Meta, IPhone / Mobile Compatible, and SPF. [SOSmart](https://www.crunchbase.com/organization/sosmart-automatic-car-crash-notification) uses 7 technology products and services including Google Analytics, G Suite (formerly Google Apps for Work), and Apache Web Server. |
| **Downloads:** | Due to battery draining issue, SOSmart now offers a modern web platform (paid) where you can monitor emergencies 24 hours a day, 7 days a week.  7000+ active users |
| **Recognitions** | SOSmart in the "100 noteworthy young startups" by [VentureBeat](https://www.facebook.com/venturebeat/?fref=mentions&__xts__%5B0%5D=68.ARDKbgfgKj31p89aZW2Ye0UMWJ5PxAfIdhlRVNWnzloFEdikTYaatmuGD8rhQrttHy9jdgMb-O2t7EhjJ9qoCU-eXGE7ulygGAWSCaBI47fv6m6KgqlZw1XrsugX3GaSsHSF7T8b0hq1hWzu-MozVL3qFGmhZjly1HxsCxasQ6TANe8sZ6GwmffsNX8EMYtDf16qrYugfcj2zjCgmO_AXTaSXVC2YLTglTsANUM0gSBELKdKyh7kEOZCVhy-TuYxbcJqz8sBqi3grcHnmGe2b53GtEKxLbpKzrUOXoGWKI_zj0I33uw8RApIsUUGssWzvLiywyhlTntmtIOShEMVa8UJb5l8&__tn__=K-R) !! |
| **Sources** | <https://www.crunchbase.com/organization/sosmart-automatic-car-crash-notification>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/>  <http://www.sosmartapp.com/>  <https://apps.apple.com/us/app/sosmart-automatic-car-accident/id991589696>  SoSmart Socials |
| **Ideas/ How it Benefits us** | Use of sensors, emergency contact, location tracing |

1. **Drive Mode**

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| **Description** | Android app that includes a voice-control option for streamlined interfacing with your favourite applications, as well as simple swipe or tap functionality. With Drive Mode voice control, drivers can easily access navigation, music and messaging apps. Drive Mode can be setup to launch when you start driving. The app will ignore calls and messages in “Do Not Disturb” mode, send text message auto replies, or you can choose to reply to calls and messages using seamless voice commands, and much more |
| **Fund Raised** | [Drivemode](https://www.crunchbase.com/organization/drivemode) has raised a total of [$9.2M](https://www.crunchbase.com/search/funding_rounds/field/organizations/funding_total/drivemode) in funding over [3](https://www.crunchbase.com/search/funding_rounds/field/organizations/num_funding_rounds/drivemode) rounds. Their latest funding was raised on [Mar 23, 2017](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_at/drivemode) from a [Series A](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_type/drivemode) round(6.5 mil panasonic). [Drivemode](https://www.crunchbase.com/organization/drivemode) is funded by [6](https://www.crunchbase.com/search/principal.investors/field/organizations/num_investors/drivemode) investors. [Miyako Capital](https://www.crunchbase.com/organization/miyako-capital) and [NEC Capital Solutions](https://www.crunchbase.com/organization/nec-capital-solution) are the most recent investors. On Oct 8, 2019, [Honda R&D Americas](https://www.crunchbase.com/organization/honda-r-d-americas) acquired [Drivemode](https://www.crunchbase.com/organization/drivemode) for an [undisclosed amount](https://www.crunchbase.com/acquisition/honda-r-d-americas-acquires-drivemode--e47734d6) |
| **Advantages** | The app turns on when the GPS detects you are driving 15 MPH or more and turns off when you drop below 15 mph for 2-3 minutes. Silences incoming alerts and phone callsAutomatically replies to SMS and MMS messagesAlerts parents if the app is turned offAccess key contacts, music and navigation with one touchCustomize the home screen with a photo |
| **Disadvantages**  **And**  **Concerns** | Could use some extra polish.Some minor bugs and odd UI choices at some places. UI can get confusing when you are first getting used to the app. Sometimes the voice to text is spot on. Most of the time I have to repeat and over articulate every message more than once. all of a sudden I'm getting ads every ten minutes, and other pop-ups when its running. Very distracting and unsafe. This app reads my text messages just fine but when I reply the recipient does not receive the message. . Initiating a text message requires hands i.e., it's not hands free. Have to turn the radio down when driving or it thinks the radio is trying to respond to text messages |
| **Target Audience** | The target audience seems to be users with mobile devices who drive. No feature is made in particular to target an even narrow group. |
| **Technologies** | [Drivemode](https://www.crunchbase.com/organization/drivemode) uses 18 technology products and services including Google Analytics, WordPress, and Vimeo. [Drivemode](https://www.crunchbase.com/organization/drivemode) is actively using 15 technologies for its website. These include SPF, Google Apps for Business, and Microsoft Azure DNS. The intellectual property of [Drivemode](https://www.crunchbase.com/organization/drivemode) includes [2](https://www.crunchbase.com/search/ipqwery_patents/field/organizations/ipqwery_num_patent_granted/drivemode) registered patents primarily in the '[Computing; Calculating](https://www.crunchbase.com/search/ipqwery_patents/field/organizations/ipqwery_popular_patent_category/g06)' category. |
| **Downloads:** | The Drive mode Android App was released at the end of July 2015, and has quickly become the largest connected car platform with more than 1 million downloads from 180+ countries and hundreds of years of comprehensive driving data to date. |
| **Recognitions** | NO won |
| **Sources** | <https://www.att.com/Common/about_us/txting_driving/att_drivemode_factsheet.pdf>  <https://www.crunchbase.com/organization/drivemode>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/> |
| **Ideas/ How it Benefits us** | Voice controlled interface, traffic and safety alerts, do not disturb mode |

1. **FOCUS by TeenDrive**

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| **Description** | is a paid Apple application designed to automatically disable your teen’s phone while driving, while allowing incoming and outgoing phone calls. Parents can enable a limited number of selected music and navigational applications through FOCUS. The app will also notify parents any time FOCUS is turned off in a moving vehicle. This free family-oriented driving app gives parents the ability to monitor their child’s driving habits and notifies them when it detects unsafe driving practices. The app is downloaded on both the parents’ and the teen’s phones. It can detect whether the teen is [texting while driving](https://www.injuryclaimcoach.com/texting-while-driving.html) or exceeding a pre-set speed limit, among other features. |
| **Fund Raised** | Friends and family round only(undisclosed). |
| **Advantages** | Focus assumes that your teen is behind the wheel of a car whenever it detects the Bluetooth device nearby. As a result, the app will disable your child’s phone when it detects the driving beacon. Focus will not shut down all of the features on your teen’s phone. Your teen can still place and receive phone calls even when the app has been activated. However, the app will block incoming notifications, access to apps, and the ability to send or receive texts. |
| **Disadvantages**  **And**  **Concerns** | Initiating a text message requires hands i.e., it's not hands free. Have to turn the radio down when driving or it thinks the radio is trying to respond to text messages. Place the device in your teen’s car, preferably on the dashboard or near the steering column once it has arrived. |
| **Target Audience** | Targeted at teens with parents living nearby. |
| **Technologies**: | Not explicitly mentioned |
| **Downloads:** | Removed from play store |
| **Recognitions** | none |
| **Sources** | <https://appadvice.com/app/focus-by-teendrive-driver/1386497653>  <https://thenewswheel.com/4-apps-to-keep-teen-drivers-safe/>  <https://www.injuryclaimcoach.com/road-safety-apps.html> |
| **Ideas/ How it Benefits us** | Notifying close ones about driving habits to prevent accidents |

1. **DriveSmart**

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| **Description** | **(acquired by Bajaj Allianz General Insurance Company**) Available free for Apple and Android devices. The app tracks not only the distance and duration of each trip but also all incidents based on speed, acceleration, braking, turns and reaction to traffic signals. Users receive directions and personalized advice to improve driving performance.  [Drive Smart](https://www.crunchbase.com/organization/drive-smart) has [2](https://www.crunchbase.com/search/jobs/field/organizations/num_current_positions/drive-smart) current team members, including Co Founder, shareholder & product lead [Ian Alexander Burt](https://www.crunchbase.com/person/ian-alexander-burt). |
| **Fund Raised** | [Drive Smart](https://www.crunchbase.com/organization/drive-smart) has raised [1](https://www.crunchbase.com/search/funding_rounds/field/organizations/num_funding_rounds/drive-smart) round. This was a [Venture - Series Unknown](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_type/drive-smart) round raised on [Mar 1, 2017](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_at/drive-smart). [Drive Smart](https://www.crunchbase.com/organization/drive-smart) is funded by [Repsol Energy Ventures](https://www.crunchbase.com/organization/repsol-energy-ventures). |
| **Advantages** | As a good driver, you spend less fuel. Make some funny competitions with your friends.Take advantage of your trips and win the challenges.Drive, add Smartcoins and... Redeem them by great rewards! |
| **Disadvantages**  **And**  **Concerns** | Sometimes offers aren’t pleasing and some bugs related to redeeming offers. Deletion of points, while applying breaks to get out of parking. UI responds very slow even, pixelated icons, no explanation, and sometimes trips not recorded. Location accuracy problems. |
| **Target Audience** | The target audience seems to be users with mobile devices who drive. The ideal mobile consumer profile for the app would be a combination of Up-to-date users and Busy & Productive users. |
| **Technologies**: | [Drive Smart](https://www.crunchbase.com/organization/drive-smart) uses 15 technology products and services including Google Analytics, WordPress, and Google Tag Manager. [Drive Smart](https://www.crunchbase.com/organization/drive-smart) is actively using 47 technologies for its website. These include Viewport Meta, IPhone / Mobile Compatible, and SPF |
| **Downloads:** | [Drive Smart](https://www.crunchbase.com/organization/drive-smart) is ranked 1,814,113 among websites globally based on its 14,749 monthly web visitors. |
| **Recognitions** | PRNewswire — High School Senior from Michigan Wins Grand Prize in CTIA Wireless Foundation's Fourth Annual National Drive Smart Digital Short Contest. Quirky motor insurer Sabre makes dream start on its stock market debut with shares up 11.7% |
| **Sources** | <https://www.crunchbase.com/organization/drive-smart>  <https://campaignsoftheworld.com/technology/bajaj-allianz-general-insurance-has-launched-drive-smart-service/>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/> |
| **Ideas/ How it Benefits us** | All driving data in detail so that the user can introspect |

1. **TruckDriver.eu**

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| **Description** | informs you of incidents such as seizure, health problems or breakdowns. The incident is reported in the system, and the recipients are other users located in the vicinity. When someone calls for help, other drivers will be informed that something bad is happening. The exact location of the person in need is displayed on the map. If a driver responds to the call, he can move to the place after selecting the answer option. Thanks to this, the injured person will be sure that help will come soon. Additionally application has a "wanted Driver", through which it is possible to inform other users about the disappearance of, or attempt to locate one of the drivers. This is very useful in a situation where the driver does not respond and do not know where he currently resides. With TDapp TRUCK will be possible to send out information about the search (vehicle data, people, photos, etc.) To other drivers within a certain location. |
| **Fund Raised** | Crowd Funded |
| **Advantages** | With this application in case of emergency (robbery, health problems or failure) by 3 quick clicks you ensure yourself to help other drivers residing in the vicinity, regardless of where you currently are. When creating an application the greatest emphasis was placed on its intuitiveness and ability to quickly react. The application can save the life or health of drivers who: He does not know the language spoken in the country in which you reside He does not know to whom and how to apply for help is too much stress to use the phone or CB radio when the situation does not allow the use of other communication tools |
| **Disadvantages**  **And**  **Concerns** | This app is compatible with some of your devices. Stabilization corrections for PUSH notifications |
| **Target Audience** | Targeted at heavy-duty truck drivers who travel long-distance journeys alone |
| **Technologies**: | None explicitly mentioned |
| **Downloads:** | Installs 5,000+ |
| **Recognitions** | none |
| **Sources** | <https://www.tdapp.eu/index.php>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/> |
| **Ideas/ How it Benefits us** | Language independence (helpful while travelling). Includes medical emergency. |

1. **IOnRoad**

|  |  |
| --- | --- |
| **Description** | **(Acquired by** [**Harman International Industries**](https://www.crunchbase.com/organization/harman-international)**)** Augmented Driving warns of accidents and supports driving in real time. Visual radar maps objects in front of the truck, calculating its current speed using sensors. When the vehicle approaches the danger, an audio-visual warning appears to warn the driver of any collision. iOnRoad is definitely onto something with its Augmented Driving Android app, which adds safety features to your drive that normally cost thousands of dollars from an automotive manufacturer. Lane departure warnings didn't work for us in testing. Game mode is rather pointless. Requires a windshield mount for your Android phone. |
| **Fund Raised** | [iOnRoad](https://www.crunchbase.com/organization/ionroad) was acquired by [Harman International Industries](https://www.crunchbase.com/organization/harman-international) on Apr 10, 2013. [iOnRoad](https://www.crunchbase.com/organization/ionroad) has raised a total of [$150K](https://www.crunchbase.com/search/funding_rounds/field/organizations/funding_total/ionroad) in funding over [1](https://www.crunchbase.com/search/funding_rounds/field/organizations/num_funding_rounds/ionroad) round. This was a [Seed](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_type/ionroad) round raised on [Mar 15, 2013](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_at/ionroad). |
| **Advantages** | The application measures the vehicle’s headway distance, alerting the driver to his speed, and proximity to the traffic ahead which actually works. While iOnRoad is in use, the phone is connected to the dashboard. Drivers are provided with a personal web dashboard that they can use in making phone calls, playing music or checking a map.[[7]](https://en.wikipedia.org/wiki/IOnRoad#cite_note-israel-7) The app also assigns points for safe driving tactics, allowing other iOnRoad drives to compete for the title of safest driver. With the live view visible, you can also tap Navigation on the left to start Google Maps Navigation; then both will run simultaneously. |
| **Disadvantages**  **And**  **Concerns** | For dedicated tachograph use, you may want to purchase for Pro version. Lane departure warnings didn't work for us in testing. Game mode is rather pointless. Requires a windshield mount for your Android phone. Tap the Menu button, and you'll head over to the main menu, which features eight large icons for cuing up navigation, music, and other tasks in the background. limitation of mobile sensors and AR itself. the error of speed measurement is low but not negotiable recording takes a lot of space and battery, while charging. The only thing you need to get started is a windshield mount for your Android phone, since the app needs to "see" what's ahead at all times in order to function |
| **Target Audience** | **iOnRoad** improves driving in real-time using the power of advanced smartphones. So it is targeted at every person driving a vehicle who owns a cellphone. |
| **Technologies**: | [iOnRoad](https://www.crunchbase.com/organization/ionroad) is funded by [Qualcomm Ventures](https://www.crunchbase.com/organization/qualcomm-ventures).[iOnRoad](https://www.crunchbase.com/organization/ionroad) uses 7 technology products and services including Google Analytics, G Suite and Apache Web Server. [iOnRoad](https://www.crunchbase.com/organization/ionroad) is actively using 5 technologies for its website. These include SPF, Apache, and Google Apps for Business. |
| **Downloads:** | [iOnRoad](https://www.crunchbase.com/organization/ionroad) is ranked 15,812,565 among websites globally based on its 426 monthly web visitors. [iOnRoad](https://www.crunchbase.com/organization/ionroad) has $310.8K in estimated revenue annually.[iOnRoad](https://www.crunchbase.com/organization/ionroad) has [1](https://www.crunchbase.com/search/jobs/field/organizations/num_current_positions/ionroad) current team member, Co-Founder & CEO [Alon Atsmon](https://www.crunchbase.com/person/alon-atsmon-2). |
| **Recognitions** | TechHive- Top 12 Tech Travel Gadgets |
| **Sources** | <https://www.crunchbase.com/organization/ionroad>  IOnRoad Socials  <https://ionroad-pro.en.aptoide.com/>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/> |
| **Ideas/ How it Benefits us** | Audio-visual warning, proximity of traffic, Augmented mode and visual radar, using phone as dashcam. |

1. **ICE Card**

|  |  |
| --- | --- |
| **Description** | is an emergency application. It has a simple interface, so you can call for help with just one touch of the screen. In a life-threatening situation, the tool also provides information to paramedics, such as blood type, allergies, chronic diseases or contraindications for treatment. Using ICE- In Case of Emergency - Medical Contact card, you can create your medical contact card directly on your phone which will be available on the screen without the need to unlock the phone. With the personal details that will be available on the emergency contacts card including medical conditions, blood group, emergency contact number, etc, you will be able to receive the assistance that you may need in an emergency situation. Besides this basic information, you also have the option to add additional information such as allergies, medicine, and disease. |
| **Fund Raised** | No specific round, Self own money and in app purchases only |
| **Advantages** | With ICE App, the first time responders will easily have access to all the information they will need to provide you with medical emergency help and also to call your loved ones. The app also includes a ‘secret’ section which will be encrypted with a passcode so that only a loved one who has the passcode may have access to the information inside it. While some emergency responders lauded the suggestion[[3]](https://en.wikipedia.org/wiki/In_Case_of_Emergency#cite_note-3) others have criticized it. |
| **Disadvantages**  **And**  **Concerns** | Medical service personnel on site normally do not have the time to contact relatives. Information stored in a phone is thus useless for medical care prior to hospital. Contacting relatives of a seriously injured person is a sensitive task that is not carried out by telephone in the first place. Other problems include language-dependent text (ICE in English, ECU in French, etc. etc.), the difficulty of accessing locked, discharged or broken phones, differences among mobile models requiring training of emergency responders. |
| **Target Audience** | Targeted at everyone who owns a phone to save time in emergency situations. More useful for the ones who travel alone o live far from family. |
| **Technologies**: | None mentioned explicitly |
| **Downloads:** | 4000000+ Downloads |
| **Recognitions** | None mentioned |
| **Sources** | <https://www.americanmedical-id.com/medical-ids-in-emergencies>  <https://trans.info/en/apps-prevent-accident-even-save-life-84303> |
| **Ideas/ How it Benefits us** | Having the details of the victim in emergency, including allergies and on- going treatments. Basically medical footprint. Avoids delay in services (e.g. getting right blood type) and improves efficiency of doctor. |

1. **Nexar**

|  |  |
| --- | --- |
| **Description** | The new technology uses a dash cam to record events on the road. According to [*Mashable*](http://mashable.com/2017/02/17/nexar-ai-dash-cam-uber-drivers/#jf48PxQRUEql), the app turns a user’s phone into a dash camera that uses artificial intelligence that could warn a driver if it detects that an accident may be about to take place. |
| **Fund Raised** | Its tech is also used by insurance companies for collision reconstructions to help with claim investigations a $30 million Series B led by Ibex Ventures. Participants included Alibaba Innovation Ventures (the venture capital investment arm of Alibaba Group), Nationwide Insurance and returning investors Aleph, Mosaic Ventures, Slow Ventures, True Ventures and Tusk Ventures. The Tel Aviv-based company also made two big leadership announcements. Nexar has now raised $45 million in total funding and is using its new capital to build its vehicle-to-vehicle (V2V) network by signing partnerships with insurance companies, drivers on ride-sharing services like Uber or Lyft, automakers and municipalities that use its tech to monitor traffic and street infrastructure. [Nexar](https://www.crunchbase.com/organization/nexar-2) is funded by [10](https://www.crunchbase.com/search/principal.investors/field/organizations/num_investors/nexar-2) investors. [Alibaba Innovation Investment](https://www.crunchbase.com/organization/alibaba-innovation-investment) and [Aleph](https://www.crunchbase.com/organization/aleph-vc) are the most recent investors. |
| **Advantages** | Flexes AI powered image retrieval.  The company claims that the app can warn drivers before an accident occurs, thus preventing the vast majority of collisions. If a collision does take place, the app will record the scenario, giving the driver evidence and data about what went wrong. The data may also be able to help users seek better recoveries from their insurance companies. Some Uber drivers are using the app to protect themselves and to have evidence to submit to insurers should an accident occur**.** |
| **Disadvantages**  **And**  **Concerns** | Drains battery. Recording isuues. Cant view the recodeingsA wifi request bug. Sometims records when car is off. Slow UI. Crashes on some phones. Camera Communication problems. Need to mount a phone. Because the Nexar app is constantly using your phone's camera to survey the road, it's sending all that data back to its Israel-based servers for analysis which is shared with insaurance companies etc. Drains Battery. |
| **Target Audience** | Nexar has a large target market, which is why it could become one of the must-have apps. Anyone who drives a car — from Sunday-afternoon cruisers to 24/7 Uber drivers — could find a use for this, and the more uptake it gets, the better it should become as a safety tool for motorists. |
| **Technologies**: | [Nexar’s](https://crunchbase.com/organization/nexar-2) dashcam app relies on computer vision and sensor fusion to detect accidents and analyze road conditions, then sends real-time alerts to other vehicles on its network. [Nexar](https://www.crunchbase.com/organization/nexar-2) uses 50 technology products and services including Google Analytics, WordPress, and Vimeo. [Nexar](https://www.crunchbase.com/organization/nexar-2) is actively using 89 technologies for its website. These include Viewport Meta, IPhone / Mobile Compatible, and SPF. [Nexar](https://www.crunchbase.com/organization/nexar-2) has [1](https://www.crunchbase.com/search/ipqwery_patents/field/organizations/ipqwery_num_patent_granted/nexar-2) registered patent in the '[Computing; Calculating](https://www.crunchbase.com/search/ipqwery_patents/field/organizations/ipqwery_popular_patent_category/g06)' category. Additionally, [Nexar](https://www.crunchbase.com/organization/nexar-2) has registered [3](https://www.crunchbase.com/search/ipqwery_trademarks/field/organizations/ipqwery_num_trademark_registered/nexar-2) trademarks with the most popular class being '[Scientific and electric apparatus and instruments](https://www.crunchbase.com/search/ipqwery_trademarks/field/organizations/ipqwery_popular_trademark_class/c9)'. On Jun 17, 2019, — [Nexar Announces AI-Powered Image Retrieval Method for Better Localization in Cities](https://www.prnewswire.com/news-releases/nexar-announces-ai-powered-image-retrieval-method-for-better-localization-in-cities-300869391.html). |
| **Downloads:** | Monthly Visits 75,044 Owler Estimated Revenue $1M |
| **Recognitions** | None mentioned |
| **Sources** | <https://venturebeat.com/2016/08/31/nexars-smart-dashcam-recording-app-arrives-on-android-to-help-make-roads-safer/>  <https://play.google.com/store/apps/details?id=mobi.nexar.dashcam&hl=en_IN>  <https://www.crunchbase.com/organization/nexar-2>  <https://www.willdavidson.ca/top-apps-that-prevent-car-accidents/>  Nexar Socials |
| **Ideas/ How it Benefits us** | Dash Cam to record events, and store data in database. Doesn’t only alert the user about the potential harm but gives us details of driving about other vehicles around. Can gather more data and detect dangerous points with ease. Video Proofs for reckless driving, potential for issuing driving tickets. |

Patents/Studies

1. *Discriminant analysis-based high road real-time traffic accident risk forecasting method*

**Overview-** Real-time traffic accident risk prediction method, a rapid road accident risk discriminant model for rapid detection area based on the road discriminant analysis, real-time traffic flow characteristic parameters into the fast road accident risk discriminant model, to determine whether there is the risk of traffic accidents. The method of the present invention utilizes fast road traffic detection apparatus acquires characteristic parameters of real-time traffic in real-time prediction of the traffic accidents, and has good prediction accuracy, using the prior art are overcome disaggregate traffic safety statistical analysis the presence of defects and shortcomings in the art engineering aspect, the method in determining the risk of road traffic accidents rapid, predictive traffic accidents has practical application value.

**Claims:**

1) speed data before the traffic accident information implementing section and accident generation is obtained

(2) speed data of enforcement section when not having an accident is obtained.

(3) accident-non-accident transport information sample set in constitution and implementation section.

(4) DBN traffic Accident Forecast Model is set up.

(5) DBN traffic Accident Forecast Model is used to predict:

**Advantages/How it Benefits us:** Compared with the prior art, the technical solution of the present invention has the following advantages: 1. The method of prediction and traffic accident on a road different from a conventional grade, the present invention is designated in the absence of the high-grade road traffic collection facilities , you cannot obtain traffic flow parameters of traffic flow, market share, etc., you can use different means to obtain traffic information collection speed data run the risk of road traffic in real-time estimates. The accident prediction accuracy rate. Accident prediction model using the real-time running the risk of traffic flow forecast, prediction accuracy can be maintained at high levels, and then on the road vehicle warning or control, can reduce accidents, improve traffic safety.

NO definite cost analysis included

**Source:** <https://patents.google.com/patent/CN104751642A/en>

1. *Roadside accident monitoring and alarming system*

**Overview-**The present invention relates to a roadside accident monitoring and alarming system, which comprises a data acquisition module, a data processing module and an accident information issuing module. The data acquisition module, the data processing module and the accident information issuing module are sequentially connected through a wireless network. The data acquisition module comprises an acceleration sensor used for acquiring the roadside guardrail vibration information and a Zigbee communication unit. The data acquisition module is in communication with the data processing module via the Zigbee communication unit. The data processing module comprises a data receiving unit, a data processing unit and a 3G remote unit, wherein the data receiving unit, the data processing unit and the 3G remote unit are sequentially connected. The data receiving unit is used for receiving the acceleration data acquired by the acceleration sensor. The accident information issuing module is used for receiving and publishing the alarm information, and then storing the acceleration data. Compared with the prior art, the system is accurate in positioning, and fast in speed. Therefore, the defects of existing roadside accident monitoring systems in the prior art are overcome.

**Claims:**

1. a roadside accident monitoring and warning system, it is characterised in that include the data acquisition module, data processing module and the accident information release module that are sequentially connected with by wireless network. Described data acquisition module includes the acceleration transducer for gathering roadside barrier vibration information and Described accident information release module is used for receiving and issuing warning message, and stores acceleration information。
2. it is characterized in that, described data processing module also includes interconnective second singlechip and the second source powered for second singlechip.
3. it is characterised in that be provided with the data processor for processing acceleration information in described data processing unit and for generating the warning message maker of warning message。
4. according to claim 3 and warning system, it is characterised in that the work process of described data processor is as follows:obtain the root-mean-square value of acceleration information, and judge whether to collide, if it is, perform step (2), otherwise, do not process；use cubic spline functions to make the acceleration root-mean-square value scattergram along space coordinates, find extreme point and as Position of collision point:according to K-Means clustering algorithm, acceleration root-mean-square value carried out cluster analysis, corresponding collision earthquake intensity in various degree。
5. a kind of roadside accident monitoring according to claim 4 and warning system, it is characterised in that in described cubic spline functions, natural boundary conditions takes S " (x0)=S " (xn)=0。
6. a kind of roadside accident monitoring according to claim 1 and warning system, it is characterised in that the information that described accident information release module includes being sequentially connected with receives server, Database Unit and warning message display unit。
7. a kind of roadside accident monitoring according to claim 1 and warning system, it is characterized in that, described data acquisition module is evenly arranged in the outside at highway trackside guard rail span centre position by setting spacing, and detection in real time is perpendicular to the horizontal acceleration of guard rail trend。
8. a kind of roadside accident monitoring according to claim 1 and warning system, it is characterised in that described data acquisition module is protected shell encapsulation by high-strength engineering plastic。
9. a kind of roadside accident monitoring according to claim 1 and warning system, it is characterised in that described accident information release module is arranged on highway work station。

**Cost Analysis:** A power consumption analysis : Communication chip CC2530F25 sleep pattern electric current 1uA, sending mode electric current 29mA, receive mode current 24mA。Acceleration transducer 12 chip ADXL103 running current 0.7mA, voltage stabilizing chip AMS1117-3.3 efficiency is relevant to battery pressure drop。**Proposed arrangement capacity > accumulator of 6000mAh, it is contemplated that replacing construction is 1 year。**data acquisition module A cost analysis: In data acquisition equipment, each chip cost amounts to about 30 yuan with peripheral circuit element (switch, display lamp, button etc.) cost。Calculating by Lay interval L=500m, every thousand kilometers of equipment costs are about **240,000 yuan。**

Data processing module B power consumption analysis. The normal energy consumption of data processing module B node about monthly 1000mAh。**Proposed arrangement capacity > 6000mAh battery, it is contemplated that replacing construction is half a year**。data processing module B cost analysis: In data processing module B, each module chip amounts to about 250 yuan with peripheral circuit element (switch, display lamp, button etc.) cost。Arrange in the ratio with data acquisition module A Lay interval 1:20, every thousand kilometers of equipment costs about **100,000 yuan。**

**Source:** <https://patents.google.com/patent/CN105702032A/en>

1. *Comprehensive setting method for speed control facilities of road-accident-prone road section*

**Overview-**The present invention discloses an accident-prone road sections synthesis methods is provided a vehicle speed control facility, which is based on principles of cognitive psychology and ergonomics, determining accident-prone road signs, speed limit signs, marking the three vibration reducer and the position between the starting position from their relations with the accident-prone sections between so scientific and rational way for the driver to decelerate driving tips and warnings before entering the road accident prone sections distance relationship. The present invention is a road accident-prone road signs, speed limit signs is provided and a vibration reduction integrated marking three kinds of facilities provides a detailed method of setting effective.

**OBJECTIVES OF Study:**

1. To study the causes of accidents and suggest corrective measures at potential location

2. To evaluate existing design

3. To compute the financial losses incurred

4. To support the proposed design and provide economic justification to the improvement suggested by the traffic engineer

5. To carry out before and after studies and to demonstrate the improvement in the problem.

**How it Benefits us:** Studies problems related to geometric definition and traffic congestion hence can be used to determine the accident prone areas.

**Source:** <https://www.researchgate.net/publication/315829097_Road_Accidents_and_Prevention>

1. *Detecting traffic and accident data at road junctions*

**Overview:** The invention relates to a method for detecting traffic and/or accident data at a road junction by means of a vehicle which has a control unit which is coupled to at least one sensor (ST) of the vehicle, in which method: - in a first step, the sensor (ST) detects (SO) traffic crossing the vehicle; and - in a second step, the data which represents the crossing traffic is transmitted (S4) from the control unit of the vehicle to at least one receiver (FZ, DV) which is external to the vehicle. The method for detecting traffic and accident data at road junctions does not only represent a significant improvement for avoiding accidents and/or traffic jams.

**Claims:**

9) A method for capturing at least one of traffic data and accident data at a junction in road traffic by using a vehicle having a control unit which is coupled to at least one sensor of the vehicle.

10) The method of claim 9, further comprising, before transmitting the data, pre-processing the data representing the crossing traffic with the control unit of the vehicle.

11) The method of claim 10, wherein the pre-processed data represent at least one of a time, a duration, location coordinates and a number of road users crossing the vehicle.

12) The method of claim 10, wherein the pre-processed data comprise information about a state of activation of a driver assistance system of the vehicle.

13) The method according to claim 12, wherein the data evaluated by the receiver form a basis for navigation planning and route planning.

14) A device for capturing at least one of traffic data and accident data at a junction in road traffic by using a vehicle, wherein the vehicle comprises at least one sensor coupled with the control unit and configured to detect traffic crossing the vehicle, and a control unit configured to transmit data of traffic crossing the vehicle from the control unit to at least one receiver external to the vehicle for processing.

15) The device of claim 14, wherein the external receiver comprises a control unit of another vehicle.

16) The device of claim 15, wherein the at least one sensor (ST) is a photographic sensor and/or an infrared sensor and/or a radar sensor and/or a laser sensor and/or an acoustic sensor.

**Advantages:** information regarding dangerous junctions in road traffic, such as intersections, highway ramps or road junctions is of particular interest because traffic accidents have an immediate negative impact on the traffic flow. Currently, dangerous junctions in road traffic are recorded only by certain institutions, such as the local police department, GIDAS or the Audi Accident Research Unit. A major advantage of the method lies in its independence of infrastructural detection sensors, as is the case for example with controlled junctions having traffic lights. Furthermore, no other persons/technical resources are needed to capture the traffic situation. Moreover, even critical situations without collisions can be detected, minor damages that were not recorded by the police, but which are an indication of problematic junctions in road traffic.Thus, movement data of other traffic can be captured in addition to their own movement data. The collected data can be transmitted to a receiver external to the vehicle unchanged, i.e. as raw data. Advantageously, the pre-processed data represent at least a point in time and/or duration and/or location coordinates and/or a number of road users crossing the vehicle. Based on these data, inferences can be easily made on the traffic flow and/or events having a negative impact. Especially valuable is information relating to dangerous road junctions, such as intersections, highway ramps and road junctions. A problematic junction in road traffic can be readily located by way of the detected position coordinates; peak or periods of low traffic volumes can be easily identified by way of the time; duration and number of road users crossing the vehicle provide insight into possible traffic congestion or a smooth traffic flow.According to another particularly advantageous embodiment, the pre-processed data include information relating to an activation state of a driver assistance system of the vehicle. If a critical situation exists at the respective junction in road traffic when the driver has activated his driver assistance system, a dangerous junction in the road traffic can be inferred, because the driver gets into a dangerous situation in spite of the active driver assistance system. This information is particularly valuable when the evaluated data are introduced into a navigation system or route planning software, because a driver assistance system in the vehicle can then be operated automatically or the driver may be prompted to turn the driver assistance system on when approaching the dangerous junction in road traffic. As a result, accidents can be anticipated and traffic congestion can be avoided. Furthermore, these data are also highly useful in the planning of roads and traffic networks. It is particularly useful when the at least one receiver external to the vehicle, to which the pre-processed data are transmitted, includes a control unit of another vehicle and/or central processing location. If one or more vehicles are recipients of the pre-processed data, then these vehicles can be made aware of the danger zone or a “sluggish” traffic based on the received information and respond intelligently either individually or as a “swarm”.

**How it benefits us: Can be used to inform on dangerous junctions and redirect traffic in cases of congestion**

**Source:** <https://patents.google.com/patent/US20150213712A1/en>

1. *Government initiatives on road safety using technology*

**5.1 Road Safety Information Systems**

Road Traffic Injuries are one of the leading causes of premature deaths, hospitalizations, disabilities, and socioeconomic losses. The problem is hidden and unrecognized due to the absence of good quality information within the health and related sectors. The currently available data reveal only the number of deaths due to different causes of injuries which is not enough to formulate injury prevention programs. The Injury surveillance system aims at collecting relevant information from a large number of participating organizations in a uniform way to understand injury profiles and characteristics. Reliable and scientific information is one of the basic requisites to plan, implement, and evaluate road safety activities. Information of RTI is primarily collected by the Police department and sufficient information is not available from the health sector and under-reporting is a serious issue undermining the public health burden and impact of RTIs.

**How it benefits us:** ***Features of the app like Reporting Accident, real time road safety data, and recording the assistance response time could prove pivotal to provide quality information to prepare injury prevention program through***

**5.2 Road Traffic Injury Surveillance Project**

A Bengaluru study showed that nearly 5 − 10% of deaths and more than 50% of moderate to serious injuries are not included in official reports. In this context, the Bengaluru injury and road traffic injury surveillance program had been initiated in 2007 under the auspices of the Indian Council of Medical Research, World Health Organization India country office and Ministry of Health and Family Welfare, New Delhi. This project was planned to develop a surveillance program with data collection from 25 major hospitals in Bengaluru along with linkages to police records. As a pilot project, this program was initiated in Bengaluru, Pune, and New Delhi. Depending on the experiences and the lessons learnt, the program will be expanded to other parts of India. This RTI surveillance endeavour is a prelude to integration with the Government of India's Integrated Disease Surveillance Project (IDSP). IDSP is a decentralized, state-based surveillance program in the country, which is intended to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. RTAs is one among the core conditions under surveillance in IDSP (linkup with police computers).

**How it benefits us:** ***By linking directly (and the community of volunteers) to hospital and police stations, the app can help in implementation of this project as well.***

1. *Study- Government Initiatives and The main thrust of accident prevention and control across the world*

**How it benefits us: Provide us information about things to keep in mind while working on the solution and gives us a raw idea of the government’s approach in tackling the problem and the way we can partake in it.**

**Crux:** Plans to help the old fashioned way, where a passer-by takes the victim to the hospital. Is trying to improve response time by providing greater number of hospitals, better roads and altogether better infrastructure. Plans to prevent via imposing hefty fines and better law enforcement, better roads.

### Logistics issues faced:

#### **Training of drivers**

Recent study among the taxi drivers in north India noted that three-fourths (77.38%) had formal training, yet nearly all were consistently using seat belts and pursued front-seat passengers to use seat belts. The participants admitted avoidable risky behavior during driving, namely, talk in speaker mode (73.44%), calling (87.21%), and hearing music (49.84%), while a minority (4.92%) confessed watching video and using Bluetooth headphone (11.80%); all these risky behaviors culminated to missing road signs by 71.80%.[[55](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6482791/#ref55)] Another Indian study noted that formal training, retraining, and sensitization on avoidable risky behaviors be imparted to professional and nonprofessional drivers in a systematic manner and to be a part of curricular education.[[56](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6482791/#ref56)]

#### **Quality and maintenance of roads**

The above-mentioned risk factors are mostly person-centric and do not pertain to environmental factor infrastructure which has a huge role to play. There is a consensus among researchers on road safety that transport logistics add speed and efficiency leading to progress of any country

**Detailed Study:**

The main thrust of accident prevention and control across theworld has been on 4 E’s:

* Education
* Enforcement
* Engineering
* Environment and Emergency care of road accident victims.

**Educational approach**

It relies on dissemination of road safety awareness and regulation through media, classrooms and non-governmental organizations (NGOs). This approach takes a longer time to achieve the desired change in individual perceptions and attitudes. With a view to spread road safety awareness, the government has undertaken series of publicity measures through print, TV/Radio/slides, exhibitions, seminars and workshops. The scheme is under review to make it more effective.

**GOV Initiatives**

1. **Refresher Training for Heavy Vehicle Drivers:** To this end, the Ministry of Road Transport & Highways’ scheme titled “Two days refresher training to heavy motor vehicle drivers in unorganized sector” was envisaged to inculcate safe driving habits, to acquaint drivers with road safety regulations and upkeep of vehicles in road worthy condition.
2. **Model Driving Training Schools:** Financial assistance is being given to States/UTs for setting up Model Driving Training Schools to produce well trained drivers and impart refresher courses to drivers. The main elements of the scheme are: provision of land by State/NGO; responsibility for operation of school and recurring cost by the State/NGO and technical project appraisal/supervision by Central Institute of Road Transport (CIRT), Pune. So far 13 proposals from States/NGO’s have been senctioned for setting up Model Driver Training Schools in West Bengal, Assam, Karnataka, Andhra Pradesh, Kerala, Himachal Pradesh, NCT of Delhi, Uttarakhand, Orissa, Uttar Pradesh, Nagaland, Madhya Pradesh and Haryana

**Enforcement Approach:** Its prime emphasis is on restraining road users from undertaking behaviours which expose road users and others to risk of accidents and injuries. 44 The Indian Motor Vehicle Act of 1988 has Chapter 8 and portion of Chapter 13 devoted to many rules and regulations, viz. laws with regard to use of safety devices (helmets), speed limits, etc.

**GOV Initiatives**

1. Goods vehicles are required to be inspected for fitness every year after two years of registration of the vehicle. Norms for safety components such as safety belts, power steering, rear view mirrors, instrument panel and lighting system, etc have been notified.
2. **Provision of Road Safety Equipments:** Theis is a scheme for providing road safety equipments to States/ UTs for enforcement and implementation of various rules & regulations relating to road safety. Under this scheme, so far, 24 Interceptors have been sanctioned for the purpose of detection of violation of rules by the road users such as overspeeding, drunken driving, lane –jumping, dangerous driving etc. The basic objective is to amend the provisions of the Motor Vehicles Act to enhance penalties for various traffic offences such as rash and negligent driving, drunken driving, driving at excessive speed, driving without licence, use of mobile phone while driving, etc, so as to serve as a deterrent for the drivers to follow traffic rules and maintain discipline on roads. Amendments have also been suggested to rationalize the provisions relating to payment of compensation to road accident victims. It is proposed not only to enhance the amount of compensation but also to revise it every three years, commensurating the compensation with the rising cost of living and also to expedite the claim settlement process. An element of civil liability is also proposed to be inserted in the Act by making a provision for penalty up to Rs.5,000/- by a person who drives in a rash or negligent manner and causes injury to a person or damages any property.

**Environmental & Engineering Approach**: This covers broad range of interventions to make road user safe through better road environment and safer vehicles. Safer vehicles by improving crash worthiness and safety of occupants – safety belts, airbags, laminated windshields, improving braking conditions, installing suitable lights to reduce glare; better roads through better road design, geometry and markings, traffic calming techniques, identification of accident black spots and their treatment, good visibility of roads with lighting, segregation of traffic into slow and fast moving categories.

Among the important environmental measures is better land use pattern which promotes shorter travel time and distance thus restricting demand for travel leading to reduced traffic congestion on roads. these measures do require substantial resources, which developing countries may find it difficult to harness.

**GOV Initiatives**

1. **Road Engineering:** It is the endeavour of Government to make Road Safety an integral part of the design at planning stage. National Highway Authority of India (NHAI) is ensuring usage of road safety furniture and taken a number of steps to enhance safety of the road users.
2. **The project designs**, while meeting the safety standards, provide for various measures to enhance the road safety like segregation of local and through traffic by constructing flyovers, underpasses, bypasses, service roads, etc.; user facilities like bus/ truck layby, wayside amenities; safety features like road markings, signages, crash barriers, studs, delineators, lighting in urban areas/ bridges/ flyovers, speed retarders on cross roads at junctions, etc.; and pedestrian facilities like zebra crossings, pedestrian underpasses, foot over bridges, pedestrian guardrails, etc. (c) During O&M : Tow Away Vehicles for removing the breakdown/ damaged vehicles, ambulances to provide immediate medical help during golden hour to the accident victims and route patrolling vehicles to check unauthorized activities/ guide the road users. These facilities are available at every 50 km of sections in operation on an average. (iii) State-of-the-Art Advanced Traffic Management System (ATMS) comprising emergency call boxes, variable messages signs, CCTVs, traffic counters cum classifiers, etc. has been provided/ being provided on selected sections mostly under NHDP Phase V. (iv) Road Safety Audits in 2,825 km on the completed sections and Public Education Campaigns on the Golden Quadrilateral of 5,864 km have been undertaken.

**Emergency accident care**: This covers organization, delivery of emergency accident care and logistic support for effective and coordinated delivery of health care to accident victims. WHO guidelines for “essential trauma care” recommend establishing achievable and affordable standards for injury care.

Road safety is essentially a multi-sectoral activity. It requires a systems approach with coordinated efforts of health, law, transport, police, insurance agencies and NGOs.**(Our app links all**)

**GOV Initiatives**

1. **National Highway Accident Relief Service Scheme (NHARSS):** The scheme provides for supply of cranes and ambulances to States/UTs/NGOs for relief, rescue and evacuation of accident victims to nearest medical aid centre and for clearing the accident site. Besides NHAI also provides ambulances at a distance of 50 Km on each of its completed stretches of National Highway under its operation and maintenance. So far 227 Ten tonne cranes and 40 small/medium size cranes were provided under this scheme. Also 437 ambulances were given to various States/NGOs. b) Medical Care: During the Ninth and Tenth Five Year Plan periods, Ministry of Health & Family Welfare were operating a scheme under which financial assistance of up-to Rs.1.50 crore was being provided to the State Government Hospitals located on National Highways for upgradation and strengthening of emergency facilities. Ministry of Health & Family 49 Welfare have now formulated a scheme to be implemented during the Eleventh Five Year Plan under which integrated Trauma Care Centre Network is proposed to be established in the State Government Hospitals /Medical College located along the Golden Quadrilateral, North-South and East-West corridors of the National Highways by upgrading trauma care facilities in 140 identified State Government hospitals at a total cost of Rs 732.75 crore.

**ROAD SAFETY AUDIT**:

**Makes sure that all the above mentioned things are taken care of**

Road Safety Audit (RSA) of select National Highways/Expressways sections on the (i)Western Transport Corridor starting from Delhi and passing through Rajasthan,Gujarat, Maharashtra, Karnataka and Tamil Nadu and (ii)part of East-West Corridor from Porbandar to Deesa covering a total length of 2,825 km has been taken up. Also Public Education Compaigns on the Golden Quadrilateral of 5,864 km have been undertaken. The specific aim for the road safety audit is that safety should be a prime post construction operative feature. The purpose of carrying out safety audit is to: • Minimize the risk and severity of accidents on the National Highways/Expressways, • Minimize the risk of accidents occurring on adjacent roads as a result of operation and maintenance of National Highways/Expressways, • Recognize the importance of safety in Highway design to meet the needs and perceptions of all type of road users, and to achieve a balance safety solution thereto, • Reduce the long term cost of scheme, bearing in mind the overall cost effective safe solutions; and • Improve the level of awareness of safe design practices by all involved in the planning, design, construction, maintenance and operation of roads. 50 6. Funds for Road Safety related activities: The details of expenditure allocated and spent on road safety activities by the Ministry of Road Transport and Highways is given in Table 14. The funds allocated are utilized for implementing various schemes,viz, Awareness Campaign for Road Safety, Refresher Training to Heavy Motor Vehicle Driver, Setting up of Model Driver Training School and National Highways Accident Relief Service Scheme (NHARSS) under which cranes and ambulances are procured and provided to the State/UT Governments and NGOs for post accident care. Except in the case of “Setting up of Model Driver Training School”, the funds for other activities of road safety are utilized by the Ministry of Road Transport & Highways directly. During the Tenth Five Year Plan, actual expenditure on road safety was Rs. 166.64 crore while for the Eleventh Five Year Plan (2007-2012), an amount of Rs. 448 crore has been proposed (excluding funds for the National Road Safety Board and Traffic Management Board). Table: 14- Funds Allocated and Spent on Road Safety Activities (Rs. Crore) Year Funds Allocated Funds Spent 2004-05 39.70 34.99 2005-06 43.05 29.70 2006-07 47.00 43.25 2007-08 52.00 42.87 2008-09 73.00 54.80 Source: Road Safety Cell, Ministry of Road Transport & Highways.

**Source**: <https://www.ncbi.nlm.nih.gov/pmc/>

1. *Study: Pivotal factors in situation of accidents and Guidelines in the law which protect the interests of volunteer*

**How it benefits us:** These guidelines imply that the government is trying to work on the collaborative help by citizens hence any citizen who helps will certainly not find himself in trouble but will only be appreciated. Also provide us with things to emphasize on while working on the solution.

**RTA states the following factors to be pivotal in situation of accidents:-**

**Importance of First Aid in Road Accidents**

Many deaths and impact of injuries can be prevented with first aid if causalities are treated immediately. The basic aims of first aid are to save life, to protect the casualty from getting more harm, and to reduce pain and priorities of casualty treatment. Trauma surgery methods like resuscitation and CPR if executed with precision, could prove to be lifesaving.

**Utilizing the “golden hour”**

The first hour after the trauma is called the “golden hour.” If proper first aid is given, road accident victims have a greater chance of survival and a reduction in the severity of their injuries. One of the main objective is to avoid delays in response time by providing first aid to the victim and quick navigation to the nearest hospital thereby utilizing the golden hour. Emergency medical care to victims of accidents and other emergencies In section 4 and 5 of RTA it is clearly mentioned that, Accident victims should be provided with medical care without raising any objection that it is a medico-legal case requiring information to the police authorities, questioning the financial condition of the victim or volunteer.

**Description:** The guidelines which were finally notified on 13th May 2015 by the Ministry of Road Transport and Highways are as follows-

1. A Good Samaritan who takes an accident victim to a hospital will not be asked any questions and can leave immediately. He/she cannot be forced to stay unless they are an eyewitness in which case only their address can be noted.

2. ***A bystander for helping the accident victim could be rewarded by the State government so as to encourage others to come to the rescue of accident victims.***

3. The Good Samaritan will NOT be held for any criminal or civil liability.

4. A bystander who calls the police or emergency service to the site of a road accident does not have to reveal his name or any other personal details on the phone or in person.

9. A Good Samaritan point can be examined through video conferencing in order to protect him/her from harassment or any inconvenience.

10. The Ministry of Health and Family Welfare will issue guidelines which will prevent public and private hospitals to not detain bystanders or good Samaritans or ask them to pay for registration and admission costs unless he/she is a family member of the injured who has to be treated immediately.

13. If the Good Samaritan requires an acknowledgement to confirm that he/she has brought the injured person to the hospital with the details of time and place, the hospital shall oblige and the acknowledgement can be prepared in accordance to the format prescribed by the State government.

**Even after the implementations of the guidelines, recent surveys and case studies have shown that people are still hesitant to help victims.**

**Source**: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3893966/>