

BIKE-CONNECT-VISION

SAUMITRA TIWARI



INTRODUCTION



- Name: Saumitra Tiwari
- Second year transfer student at Calpoly

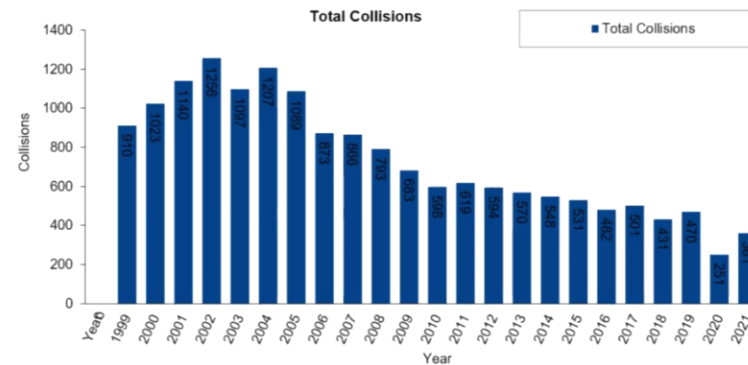


COLLISION TREND



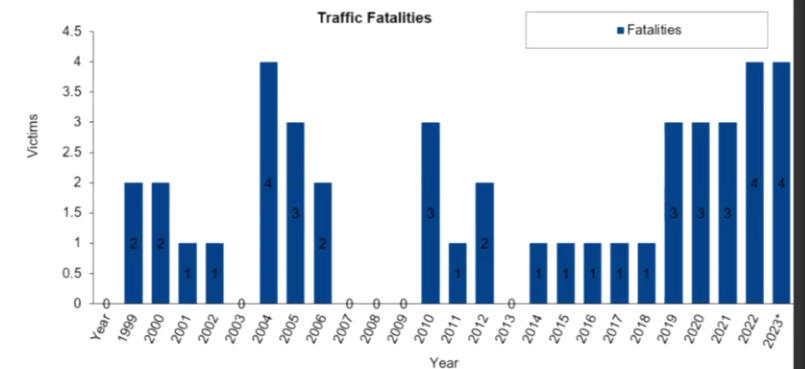
- Citywide collisions are decreasing, but a concerning spike in fatal collisions is observed, particularly post-pandemic.

Overall Citywide Traffic Collision Trend



Safety
Program
Begins

Fatal Collision Trend



PRIMARY COLLISION FACTORS



- A significant number of incidents involve people driving under the influence or not providing the right of way.
- This brings a challenge to find a way to market or advertise the awareness in the community so people can make better moral decisions.

| Factor | Rank | % |
|---|------|-----|
| All Collisions | | |
| Improper turning | 1 | 26% |
| Unsafe Speed | 2 | 17% |
| Automobile Right of Way | 3 | 14% |
| Drive/Bike Under Infl Alcohol/Drug | 4 | 9% |
| Unsafe Starting or Backing | 5 | 5% |
| Injury Collisions | | |
| Improper Turning | 1 | 22% |
| Automobile Right of Way | 2 | 21% |
| Unsafe Speed | 3 | 18% |
| Pedestrian Right of Way | 4 | 7% |
| Traffic Signs and Signals | 5 | 6% |
| Severe Injury & Fatal Collisions | | |
| Automobile Right of Way | 1 | 22% |
| Drive/Bike Under Infl. Alcohol/Drug | 2 | 14% |
| Improper Turning | 2 | 14% |
| Pedestrian Right of Way | 4 | 11% |
| Unsafe Speed | 4 | 11% |

| | | |
|-------------------------|---|-----|
| Unsafe Speed | 4 | 11% |
| Pedestrian Right of Way | 4 | 11% |
| Improper Turning | 5 | 14% |

COLLISION DATASET PROBLEM



- Collisions are recorded or mapped primarily when they involve a high percentage of either injury or property damage.
- Some collisions go unrecorded, especially if bikers did not sustain severe injuries.
- This leads to unpredictable data mapping, as not all incidents are captured in the recorded dataset.



SOLUTION: AN INTERFACE FOR THE BIKING COMMUNITY



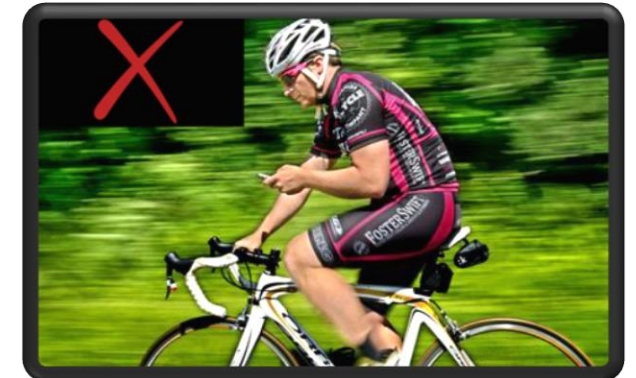
- Approximately 100 official Discord servers exist on the Cal Poly student hub, each with a membership ranging from 300 to 400 individuals.
- Within each server, there is an opportunity to foster a healthy biking community.
- Facilitate interactions between bikers and non-bikers, enabling real-time bikers' updates and mutual assistance when needed.
- The platform can serve as a hub for umbrella strategy for marketing and promoting the bike safety issues.
- The data received from individual bikers' can also be stored to keep track of all small/big collisions even those that previously went unnoticed.



SOLUTION: MEANS TO PROVIDE UPDATE IN REAL-TIME



- Emphasize that the primary focus is on ensuring the safety of bikers.
- Enable bikers to easily provide real-time information.
- Implement a gesture system that allows users to convey information through specific hand gestures.
- Offer customization options, allowing users to assign specific gestures based on their preferences.
 - Example gestures:
 - Index finger: **Indicates Lane Blockage**
 - Middle finger: **Signifies High Traffic**
 - Ring finger: **Signals an Emergency**
 - Pinky finger: **Indicates Bike Malfunction**
- Smart discord bot can parse the information provided by the user and can answer and provide these information to other users in discord application.
- The instance of this discord bot can be implemented on multiple servers providing the same functionality to each server and offering the opportunity to put custom advertisement in the channels.



■ Demo

BIKE-CONNECT-VISION (BIKE-CV)





THANK YOU

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