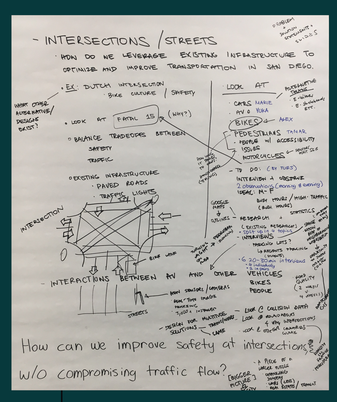
ARC: AUGMENTED REALITY FOR CARS

HOW DO WE IMPROVE SAFETY BY INCREASING VISABILITY WITHOUT COMPROMISING TRAFFIC FLOW?

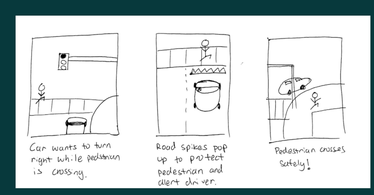
INTRODUCTION

Over the past 15 years, over 200 people have been killed[1] at the fatal fifteen intersections in San Diego. All those commuting, whether by walking, cycling, or driving, need to get from one place to another as quickly as possible, but this is complicated by poor visibility. Therefore, how can we improve safety by increasing visibility without compromising traffic flow? Solving this problem could effectively save hundreds of lives over the few years.

BRAINSTORMING



STORYBOARDS



FIELD OBSERVATIONS

We conducted field observations at three of the fatal fifteen intersections: Mission Blvd & Garnet, B St & 4th St, and B St & 5th St.

Drivers turning onto the wrong side of a one-way street.

Drivers stoped inside of the cross-walk.

USER RESEARCH & INTERVIEWS

Pedestrians need drivers to expect them to be walking and to notice their appearance.

Drivers need an increased visability and awareness of traffic laws, cyclists, and pedestrians.

Cyclists need share the road with drivers while also being able to ride safely inside and outside of bike lanes.

"I've almost hit a cyclist while driving. They were on the wrong side of the road so I wasn't expecting them." -Debbie, 45 year driver

"For everyone on the road, I think the biggest safety concern of today is distracted driving." -Jimmy, 5 year

KEY INSIGHTS

All face different chanelleges and problems on the road, but all value and want to increase safety.

Drivers, cyclists, and pedestrians all agree that lack of visibility on the road causes the most problems.

Drivers face cognitive overload from the amount of information they have to take in, leading to driving errors.

FEEDBACK & DESIGN

After receiving feedback from multiple experts, we pivoted on our idea twice, while still focusing on our main concern: visibility. We went from forcing drivers to stop at intersections to using a heads up display on the entire windshield to ARC, your personal driving assistant.

OUR SOLUTION

ARC: a heads up display which relays important information to drivers. To do this, ARC uses cloud data from smart street lights which are currently being implemented by the City of San Diego. These street lights have the capability to process and recognize images.

HOW

ARC alerts drivers of pedestrians, cyclists, and other vehicles. Additionally, important traffic laws such as no right turns will be displayed to drivers, effectively increasing visibility. After speaking with multiple experts, we know that ARC is not only feasible, but also the way of the future for solving the safety concerns of today.

WHAT'S DIFFERENT

Heads up displays do already exist and the City of San Diego is currently implementing the smart street lights. ARC combines existing technology with up-and-coming infrastructure to produce a truly novel safety experience.

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