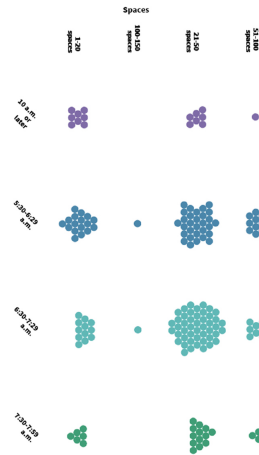# EZ PARK AND RIDE

2020 iSchool Capstone Project

TEAM EVEREST:

HARRY XIE | MAYURESH MALI

DIVYA GAURAV TRIPATHI | YANJIE NIU

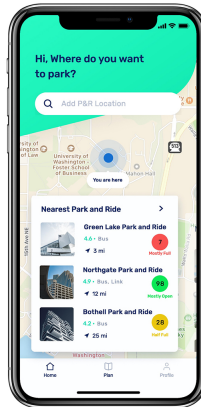## THE PROBLEM: LACK OF PARK AND RIDE INFORMATION TO USERS

THE SEATTLE SQUEEZE MAKES ITS TRANSPORTATION SYSTEM STRAINED. ALTHOUGH PEOPLE ARE RECOMMENDED TO USE PARK AND RIDE FACILITIES, NOT MANY UTILIZE THEM FULLY DUE TO A LACK OF INFORMATION. OUR TEAM ADDRESSES THIS INFORMATION PROBLEM BY PROVIDING REAL-TIME PARKING AVAILABILITY INFORMATION. WE COLLECTED REAL-TIME DATA THROUGH SENSORS, PROCESSED STREAMING DATA THROUGH A CLOUD DATABASE, AND VISUALIZED DYNAMIC DATA THROUGH A WEB APPLICATION. OUR SOLUTION NOT ONLY HELPS USERS HAVE EQUITABLE ACCESS TO PARKING INFORMATION BUT ALSO HELPS TRANSIT AGENCIES MAKE MORE EFFECTIVE DECISIONS TO SOLVE SEATTLE S TRAFFIC CHALLENGES.

Spaces

"IT'S VERY HARD FOR ME TO FIND PARKING SPACES AT PARK AND RIDES"

OUR METHODOLOGY: USER RESEARCH

WE CONDUCTED A SURVEY WITH 687 PARTICIPANTS AND INTERVIEWED 6 USERS TO LEARN USER USAGE PATTERNS AND TO KNOW HOW THE AGENCIES USE THIS INFORMATION. WE FOUND THAT MANY PEOPLE HAD DIFFICULTY FINDING PARKING SPACES AS SOME PARK AND RIDES FILLED UP AS EARLY AS 4AM IN THE MORNING. A WELL INFORMED USER COULD PLAN THEIR TRIP MORE EFFCIENTLY.

6 AM — CHECK EZPARK&RIDE FOR AVAILABILITY

7 AM — ARRIVE AT PARK AND RIDE FACILITY

8 AM — TAKE THE BUS TO THE WORK PLACE

5 PM — PICK UP THE CAR FROM PARK AND RIDE

WE HAVE CREATED THE DATA PIPELINE FOR DATA FLOW FROM IOT SENSORS TO THE CLOUD PLATFORM AND DESIGNED A PROTOTYPE SYSTEM TO SIMULATE REAL WORLD CASES. ON-SITE TESTING WAS NOT POSSIBLE DUE TO COVID-19

OUR APPROACH:

PARKING SENSORS
INFORMATION ABOUT VACANT PARKING SPACES

CLOUD
DATA PROCESSING AVAILABILITY PREDICTION

DATA FEED
GTFS, GOOGLE MAP, WAZE, ONEBUSAWAY, ETC.

USER
PLAN THE COMMUTE AHEAD WITH EZPARK AND RIDE

MOVING AHEAD

PROVIDE FULL DOCUMENTATION TO TRANSPORT AGENCIES OF OUR APPROACH AND RESULTS OF USER RESEARCH AND FEASIBILITY STUDY, INCLUDES A MINIMUM VIABLE PRODUCT (MVP)