

TOWARDS PRIVACY-AWARE NETWORKED AUTONOMOUS MOBILITY: ANALYSIS, TECHNICAL TOOLS DEVELOPMENT, AND REAL-WORLD DEPLOYMENT

DATA COLLECTION

What data will you collect or create?

In this project, we will use existing public datasets released by autonomous companies. One potential dataset is Argo verse, collected by Argo AI at Pittsburgh. We will also collect data with our own autonomous delivery robots on CMU campus or the public street. We will collect LiDAR point cloud, vision information and GPS, and analyze their potential privacy issues.

How will the data be collected or created?

We plan to develop a autonomous delivery robot as the data collection platform and study its in Pittsburgh city. We will synchronize the data and convert them to standard format. Finally, we will store the data with SQL software.

DOCUMENTATION AND METADATA

What documentation and metadata will accompany the data?

The collected data will be accompanied with meta information including descriptions of sensors, algorithms used in data processing, standard data dictionary such as sampling frequencies and units.

ETHICS AND LEGAL COMPLIANCE

How will you manage any ethical issues?

The ethic issues will be reported to the PI's university and subject to the university's Ethics policy.

STORAGE AND BACKUP

How will the data be stored and backed up during the research?

All collected data will reside on PCs and workstations belonging to the PIs' university. A data server which is expected to have MySQL installed will be set up to store all the data and hold the web application. All data will be regularly backed up either onto multiple external hard drives, or a centralized backup cloud storage, to ensure full data recovery in the event of equipment failure. In the case of catastrophic failures, we will maintain both the data server and the web application indefinitely.

How will you manage access and security?

Data derived from this project shall be retained for at least one year. The selected research results will be open source and shared to the research community through technical reports or publications. The data in this project does not contain private or confidential information. The research results belong to PI's university, selected result data and visualization can be obtained upon request by asking PI and research assistants.

DATA SHARING

How will you share the data?

Throughout the duration of the work, the PI will in a timely manner communicate any significant findings with the scientific community through journal publications, national and international conference presentations, and seminars. The reported results will be made available to the research community, where possible and permitted and upon request.