Low-cost Real-Time Learning-based Localization for Autonomous Systems

Data Collection

What data will you collect or create?

We will use publicly available driving datasets like Argoverse 2 Lidar Dataset and nuScenes dataset. We will capture point-cloud data from our 1/10th scale indoor autonomous vehicles.

How will the data be collected or created?

Data will be collected on github via open-source repositories and captured by on-board sensors from the F1Tenth autonomous racecar platform

Documentation and Metadata

What documentation and metadata will accompany the data?

We will use the Argoverse 2 Lidar Dataset and nuScenes dataset documentation and metadata.

Ethics and Legal Compliance

How will you manage any ethical issues?

As all data is open source and has already been release to the public as localization benchmarks, we do not require additional consent or protection. This data is not sensitive.

How will you manage copyright and Intellectual Property Rights (IP/IPR) issues?

As all data is open source and has already been release to the public as localization benchmarks, we do not have copyright or IP issues.

Storage and Backup

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

Data will be collected on github via open-source repositories and captured by on-board sensors from the F1Tenth autonomous racecar platform

How will you manage access and security?

Data will be collected on github via open-source repositories and captured by on-board sensors from the F1Tenth autonomous racecar platform

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

All data will be retained in publicly available datasets

What is the long-term preservation plan for the dataset?

The publicly available datasets are not owned by us but by the Argoverse and nuScenes organizations.

Data Sharing

How will you share the data?

Data will be collected and shared via github via open-source repositories

Are any restrictions on data sharing required?

No restrictions.

Responsibilities and Resources

Who will be responsible for data management?

The PI will be responsible for data management of the open-source data used in this project.

What resources will you require to deliver your plan?

We will share data processed by our algorithms via github open source repositories.

Planned Research Outputs

Dataset - "Local_INN dataset"

We will share this pointcloud data and pose/localization information publicly via github.

Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Local_INN dataset	Dataset	2024-09-29	Open	None specified	10 MB	Creative Commons Attribution Non Commercial Share Alike 4.0 International	None specified	No	No