## Grocery Bags

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## Background \& Motivation

- Many different types of grocery bags:
- Reusable Cotton
- Reusable Polypropylene
- Paper
- HDPE
- PLA

- Comparison based on bag volume


## What is the environmental cost (energy, $\mathrm{CO}_{2}$ ) of using different types of grocery bags?

## Reusable Cotton Bags



## Reusable Polypropylene (PP) Bags



## Paper Bags



## High Density Polyethylene (HDPE) Bags



## Polylactic Acid (PLA) Bags




## Summary



## In Order to Break Even...

Cotton Bags


## In Order to Break Even...

Polypropylene Bags


## What about Recycling?



## Conclusions

- Polypropylene is the best (most environmentally friendly) grocery bag to use.
- In order to break even (energetically) with disposable grocery bags, polypropylene bags need to be used 5 - 10 times.
- If not reused, cotton and polypropylene bags are even worse than disposable bags.
- It's easy to make a huge impact on the environment on a daily basis!


## Questions?

