

# 30 Gallon Robot Mini-Intro

By



# Meet FEAT!



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Behold...

My name is  
Goomba!



# The Three Milestones

- Build the basic mobile robot platform; provide the basics in sensors, actuators and mobility, and support basic programmability
- Add autonomous navigation
- Program the robot to give a tour of the CEIAS building
  - Proposed for 2023-2024 academic year
  - Software easily implemented for other Universities



# Learning From Past Mistakes

- Mapping is still a big obstacle
- Unable to efficiently self localize via routers
- Feasibility was a huge factor in past projects
  - Although this is different in our case,

mistake





# Proposed Solutions

- Hybrid Solution:
  - Coastal navigation
  - Wifi router signal localization
- Experimentation:
  - How the wheels react to different types of flooring (carpet, tile, etc.)
  - Is coastal mapping less effective along windows?
  - Taking a hands on approach to problem-solving
- In-depth feasibility study geared towards robot's capabilities





# The Plan

1. Start with coastal navigation to get an accurate floor map
2. Implement an efficient self localization component
3. Input restricted areas like staircases, elevators, etc.
4. Provide object avoidance to real-time environmental changes
5. Input a program to guide a tour!

## In Conclusion...

